

EPA Reg. No. 62719-634

ISB'S Front-end PRIA Completeness Screen

Draft 3; 10/25/07

EPA Receipt Date: 10/4/2010		EPA Reg. Number: 62719-AGU		
	Check List Item	Yes	No	N/A
1	Has the PRIA Fee been Paid ; is a copy of the check or Pay.gov receipt included in the Submission Package?	X	X	
2	Is an Application Form (EPA Form 8570-1) Included in the Submission Package, is it completely filled out and signed including package type?	X		
3	Is a Confidential Statement of Formula (EPA Form 8570-29) Included in the Submission Package, is it completely filled out and signed (boxes 1-21)?	X		
4	Is a Formulator's Exemption Statement (EPA Form 8570-27) Included in the Submission Package?		X	
5	Is a Certification with Respect to Citation of Data (EPA Form 8570-34) Included in the Submission Package?	X		
6	Is a Data Matrix (EPA Form 8570-35) Included in the Submission Package?	X		
7	Is a Label Included in the Submission Package?	X		
8	Are Data Included in the Submission Package?	X		
9	Is the Submission an Amendment?			

E-SUBMISSION



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Mr. Diego Fonseca
Regulatory Leader – Regulatory Affairs
Dow AgroSciences, LLC
9330 Zionsville Road
Indianapolis, IN 46268-1054

JAN 11 2012

Subject: Request for Reclassification of Acute Oral Toxicity Study (MRID 482346-03)
EPA Registration Number: 62719-634
Product Name: GF-2654
Submission Date: December 5, 2011
Decision Number: 458464

Dear Mr. Fonseca:

The Office of Pesticide Programs has reviewed the documents provided as part of your December 5, 2011 submission rebutting the Agency's supplemental classification given to the Acute Oral Toxicity Study (MRID 482346-03) as part of Decision 440743 for 62719-634. The Registration Division agrees with your assertion that the study can be upgraded from Supplemental to Acceptable. Please note that there are no changes to the acute toxicity profile for this product as a result of this reclassification. No changes to the product label are needed.

Attached for your reference is the Technical Review Branch review dated December 20, 2011. Please feel free to contact Michael Walsh by phone at (703) 308-2972 or via email at walsh.michael@epa.gov if you have any questions regarding this matter.

Sincerely,

Kathryn V. Montague
Product Manager (23)
Herbicide Branch
Registration Division (7505P)

Attachment



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION DIVISION (7505P)

December 20, 2011

MEMORANDUM

Subject: Name of Pesticide Product: GF-2654
EPA Reg. No.: 62719-634
DP Barcode: D396762
Decision No.: 458464
Action Code: 400
PC Code: 051505 Ethanaminium

From: Breann Hanson, Biologist *BHanson*
Technical Review Branch (TRB) *M. Klashni*
Registration Division (RD; 7505P)

To: Michael Walsh, RM Team 23
Herbicide Branch
Registration Division (7505P)

Applicant: Dow AgroSciences, LLC

FORMULATION FROM LABEL:

<u>Active Ingredient:</u>			<u>% by wt</u>
051505	Ethanaminium	CAS No. 1048373-72-3	56.3

<u>Other Ingredients:</u>			<u>43.7</u>
		Total:	100.0%

ACTION REQUESTED: The Risk Manager requests: "TRB Tox: Attached please find a rebuttal regarding the classification of an Acute Oral Toxicity Study (MRID 482346-03) as supplemental. Please review the attached material and determine if a reclassification is appropriate..."

BACKGROUND: Dow AgroSciences, LLC (herein the "registrant") has requested that TRB review their rebuttal to a previous TRB memorandum (B. Hanson, EPA File Symbol: 62719-AGU, DP Barcode: D383749, 21/MAR/2011) which classified the submitted acute oral toxicity study (MRID 48234603) as supplemental based on the reviewer concluding that the study was not conducted according to AOT 425 Guidelines. It appeared to the reviewer that the stopping criteria were not met, and so in lieu of an additional study being submitted the reviewer input additional data into an EPA-generated AOT 425 program. As the EPA-generated LD₅₀ and Eurofins-generated LD₅₀ values were the same, the reviewer concluded that the registrant would have no issue with this determination.

The registrant has now submitted two rebuttal letters, one from Nicola Stagg, Senior Toxicologist from Dow Agrosciences (letter dated 24/AUG/2011) and one from Jennifer Durando, Study Director at Eurofins PSL (letter dated 28/MAY/2011); both letters state that the assumed sigma used in the AOT 425 study was changed from the default to 0.3. As such, the study was performed correctly, and stopping criteria were adequately met.

COMMENTS AND RECOMMENDATIONS:

TRB has reviewed the information provided by the registrant and agrees with their position. The acute oral toxicity study (MRID 48234603) can be upgraded to Acceptable. As the EPA-generated LD₅₀ and Eurofins-generated LD₅₀ values are the same (1200 mg/kg bw), there is no change to the acute toxicity profile or label generated in the previous TRB memorandum.

400 No Data Required / 2,4-D Choline Salt Product

62719-634

Registrant Rebuttal; TRB Study Reclassification from Supplemental to Acceptable



December 21, 2011

Note to: File

Re: Request for Reclassification of Acute Oral Toxicity Study (MRID 482346-03)
EPA Registration Number: 62719-634
Product Name: GF-2654
Submission Date: December 5, 2011
Decision Number: 458464

Action

- Dow AgroSciences/Diego Fonseca is asking the Agency to reconsider its reclassification of an acute oral toxicity study (MRID 482346-03) submitted at the time of registration.
- Two letters supporting the registrants request for reclassification of the study from Supplemental to Acceptable accompanied the action.
 - May 18, 2011 letter from Product Safety Labs to the registrant.
 - August 24, 2011 letter from registrant to TRB Toxicology/Breann Hanson.
- TRB agrees with the request for reclassification of the acute oral toxicity study.
 - No change in tox category.
 - No label revisions needed.

308/2E
December 5, 2011



Document Processing Desk
Office of Pesticide Programs (7504P)
U. S. Environmental Protection Agency
One Potomac Yard
2777 S. Crystal Drive
Arlington, VA 22202

Attention: Michael Walsh, RM Team 23 / Herbicide Ranch / Registration Division (7505P)

GF-2654 (AI: 2,4-D)
EPA REGISTRATION NUMBER: 62719-634; previously identified as 62719-AGU
Reconsider Classification of MRID 48234603

Dow AgroSciences is respectfully submitting a petition to reconsider the classification of "Supplemental" given to the Acute Oral toxicity study on GF-2654 (MRID 48234603), as per Memorandum dated March 21, 2011 (DP Barcode: D383749). For such effect, enclosed are two letters with technical arguments that support the classification of this study should be upgraded as "Acceptable".

Contents of Submission

- Transmittal document (this letter)
- Complimentary Copy: Letter to EPA dated August 24, 2011
- Complimentary Copy: Letter to Dow AgroSciences date May 18, 2011

If you require additional information, please contact Kerri Hipsky, Registration Assistant for this product, at 317-337-7827; (kahipsky@dow.com).

Sincerely,

A handwritten signature in dark ink, appearing to read "Diego Fonseca", written over a horizontal line.

Diego Fonseca
Regulatory Leader – Regulatory Affairs
317-337-4693
317-337-4649 (FAX)
dfonseca@dow.com

Enclosures

DF/kh



COMPLIMENTARY COPY

August 24, 2011

Breann Hanson
US EPA
Washington, D.C. 20460

Dear Breann Hanson,

Dow AgroSciences submitted acute studies in support of our registration for GF-2654. In an EPA memorandum dated March 21, 2001, the acute oral toxicity study for GF-2654 (MRID 48234603) was listed as Supplemental and not Acceptable because the study was not considered to be conducted properly by the performing laboratory. We reviewed the study internally and with the performing laboratory and found that the values of sigma (0.5) and limit dose (2000 mg/kg) reported in the EPA document as PSL-generated AOT 425 were not the values applied for this study. The sigma and limit dose values applied in the study were 0.3 and 5000 mg/kg, respectively. Therefore, our assessment is that the study was conducted correctly.

GF-2654 is composed of 2,4-D choline. The acute oral LD₅₀ for GF-2654 was predicted to be 1200 mg/kg in female rats, which was based on previous toxicity data available for a similar formulation containing 2,4-D dimethylamine salt (DMA). Previous test results with 2,4-D DMA support that the active ingredient resulted in very steep dose response due to its acidic chemical property. Therefore, the sigma value of 0.3, which was lower than default value of 0.5, was selected for this study according to the recommendation in the OPPTS 870.1100 test guideline. Results from this study confirmed that our predictions were accurate for an LD₅₀ of 1200 mg/kg and for a steep dose response. There was a partial response only at 1200 mg/kg (2/3 animals survived), but the 600 mg/kg dose resulted in no animal mortality and animal death was observed almost immediately at the 2390 mg/kg dose level.

Overall, the study was accurately conducted by the performing laboratory based on the recommended dose selection and stopping criteria that were proposed by AOT425Stat program using an estimated LD₅₀ = 1200 mg/kg and sigma = 0.3. A letter supporting that the performing laboratory conducted the study using the values we provided is enclosed. For this reason, we respectfully request that you change the listing of this study from Supplemental to Acceptable. If you have continued discrepancies with this, I would be more than happy to meet with you to discuss further.

Sincerely,

Nicola Stagg

Nicola Stagg, Ph.D.
Senior Toxicologist
Human Health Assessment

Product Safety Labs

Wednesday, May 18, 2011

Dr. Nicola Stagg
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Re: GF-2654, Acute Oral Toxicity

Dear Dr. Stagg:

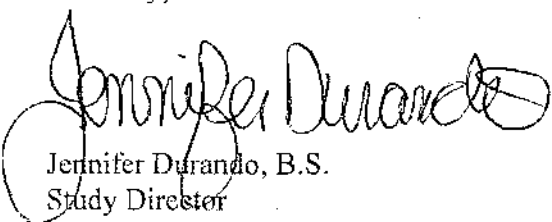
I have reviewed the memorandum sent to Dow AgroSciences from the United States Environmental Protection Agency (USEPA) on their review of the acute toxicity studies for GF-2654. Their evaluation indicates that the Acute Oral Toxicity Study on "GF-2654" was not conducted properly. After an internal review of the study data, we have confirmed that the study was conducted in accordance with the testing guideline and the dose sequence followed the AOT425 Statistical Program..

Upon review of the USEPA evaluation documents that were provided, it appears that the assumed LD50 (mg/kg) and the Assumed Sigma were kept at their default values for both scenarios that were presented ("PSL-Generated AOT 425" and "EPA-Generated AOT 425"). PSL conducted the study using the values that were provided by DOW in the protocol (assumed LD50 = 1200 mg/kg and an assumed sigma of 0.3) and are stated in the report summary. When these fields are updated using these estimated values, the AOT 425 Statistical Program will reproduce the values found in this study report (see attached).

Therefore, I reassure that the study was conducted appropriately and should be deemed "acceptable".

Please let me know if you need any additional information or if we can assist you in any other way.

Sincerely,



Jennifer Durando, B.S.
Study Director
Product Safety Labs

Product Safety Labs

APPENDIX A

1059297

AOT425statpgm (Version: 1.0) Test Results and Recommendations
Acute Oral Toxicity (OECD Test Guideline 425) Statistical Program

Date/Time: Thursday, April 15, 2010, 6:19:41 AM
Data file name: DOW #29514.dat
Last modified: 4/15/2010 6:19:38 AM

Test/Substance: DOW #29514 GF-2654
Test type: Main Test
Limit dose (mg/kg): 5000
Assumed LD50 (mg/kg): 1200
Assumed sigma (mg/kg): 0.3

Recommended dose progression: 5000, 2390, 1200, 600, 300, 151, 76, 38, 19, 9.5,
4.8, 2.39, 1.2

DATA:

Date (PS) 4/15/10

Test Seq.	Animal ID	Dose (mg/kg)	Short-term Result	Long-term Result
1	4-5-10	600	O	O
2	4-6-10	1200	X	X
3	4-7-10	600	O	O
4	4-8-10	1200	O	O
5	4-14-10	2390	X	X

(X = Died, O = Survived)

Dose Recommendation: The main test is complete.

Stopping criteria met: LR criterion.

SUMMARY OF LONG-TERM RESULTS:

Dose	O	X	Total
600	2	0	2
1200	1	1	2
2390	0	1	1
All Doses	3	2	5

Statistical Estimate based on long term outcomes:

Estimated LD50 = 1200 (The one dose with partial response).
95% PL Confidence interval is 478.2 to Greater than 20,000.

4/15/10

Material to be added to an e-Jacket/Jacket

Reg. No. 62719-634

Description: notification

1. ☒ Placement within the e-Jacket/jacket:

☒ Default: (chronological, top = newest)

☐ File Location: (PDF page number, i.e., "before page 45")

2. ☒ Send to Data Extraction contractors this material:

☐ Newly stamped accepted label

☒ Notification

☐ New CSF

☐ Other: _____

3. Attach this coversheet to the top of the material or jacket. It must be well organized and clipped together, NOT STAPLED. Then give the material with this coversheet to staff in the Information Services Center (Room S-4900).

Reviewer's Name: _____

Jasmine Branch

Phone: (703)-347-0351

Division: RD/HB

Date: _____

9/21/11

Created August 14, 2008



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Diego Fonseca
Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1054

SEP 15 2011

Subject: EPA Reg. 62719-634 / GF-2654 Notification

Dear Mr. Fonseca:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 8-9-11 for the product EPA Reg. 62719-634 / GF-2654. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action falls within the scope of PRN 98-10. The revised basic csf and alternate csf #1 are acceptable.

If you have any questions please call Erik Kraft at 703-308-9358 or email at Kraft.Erik@epa.gov.

Sincerely,

A handwritten signature in black ink, which appears to read "Kathryn V. Montague", is positioned above the typed name.

Kathryn Montague
Product Manager 23
Herbicide Branch
Registration Division (7505P)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Diego Fonseca
Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1054

SEP 15 2011

Subject: EPA Reg. 62719-634 / GF-2654 Notification

Dear Mr. Fonseca:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 8-9-11 for the product EPA Reg. 62719-634 / GF-2654. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action falls within the scope of PRN 98-10. The revised basic csf and alternate csf #1 are acceptable.

If you have any questions please call Erik Kraft at 703-308-9358 or email at Kraft.Erik@epa.gov.

Sincerely,

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Kathryn Montague
Product Manager 23
Herbicide Branch
Registration Division (7505P)

308/2E
August 9, 2011



Document Processing Desk (NOTIF)
Office of Pesticide Programs (7504P)
U. S. Environmental Protection Agency
One Potomac Yard
2777 S. Crystal Drive
Arlington, VA 22202

GF-2654 (AI: 2,4-D)
EPA REGISTRATION NUMBER: 62719-634
NOTIFICATION OF MINOR CONFIDENTIAL STATEMENT OF FORMULA CHANGE PER PR NOTICE 98-10

Enclosed is Confidential Statement of Formula (CSF) for GF-2654. This CSF is to replace the EPA accepted Basic CSF dated August 19, 2010 and Alternate #1 CSF dated August 19, 2010.

This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA, and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Contents of Submission

- Transmittal document (this letter)
- Application for Pesticide, EPA Form 8570-1
- Basic Confidential Statement of Formula entitled GF-2654 dated July 14, 2011 (2 Pages) (2 Originals)
- Alternate #1 Confidential Statement of Formula entitled GF-2654 dated July 14, 2011 (2 Pages) (2 Originals)

If you require additional information, please contact Kerri Hipsky, Registration Assistant for this product, at 317-337-7828 (kahipsky@dow.com).

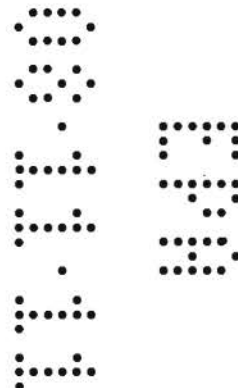
Sincerely,

A handwritten signature in black ink, appearing to read "Diego Fonseca".

Diego Fonseca
Regulatory Leader - Regulatory Affairs
317-337-4693
317-337-4649 (FAX)
dfonseca@dow.com

Enclosures

DF/kh





United States
Environmental Protection Agency
Washington, DC 20460

☐ Registration
☐ Amendment
☒ Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number Dow AgroSciences LLC/62719-634	2. EPA Product Manager Kathryn Montague	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Dow AgroSciences LLC/GF-2654	PM# 23	
5. Name and Address of Applicant (Include ZIP Code) Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: NOTIFICATION EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Proposed replacement of Basic CSF dated August 19, 2010 and replacement of Alt #1 dated August 19, 2010. Minor change to update Registration #.

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Metal	
* Certification must be submitted				<input type="checkbox"/> Plastic	
If "Yes" Unit Packaging wgt. No. per container		If "Yes" Package wgt. No. per container		<input type="checkbox"/> Glass	
				<input type="checkbox"/> Paper	
				<input type="checkbox"/> Other (Specify) _____	
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled				<input type="checkbox"/> Other _____	

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name	Title Regulatory Leader	Telephone No. (Include Area Code) 317-337-4693
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamp)
2. Signature 	3. Title Regulatory Leader	
4. Typed Name Diego Fonseca	5. Date August 9, 2011	

Receipt for Section 3

S: 901318

Resubmission: ☐ Yes ☒ No

Regulatory Type: Product Registration - Section 3

Fee For Service: ☐ Yes ☒ No

Application Type: Notification

Print Letter

Enter More Information

Tracking

Company: 62719 DOW AGROSCIENCES LLC V

Risk Manager: Registration Division, Risk Management Team 23

Product #: 62719-634 Product Name: GF-2654

Overlook:

Me Too Section3: Me Too Product Name:

Application Date: 09-Aug-2011 ic

OPP Rec'd Date: 11-Aug-2011 ic

Front End Date: 11-Aug-2011 ic

Risk Manager Send Date: 11-Aug-2011 ic

FFS Due Date:

Negotiated Due Date:

OPP Target Date:

Receipt Content	Des
CSF	

Fast Track: New by email:

Receipt Description:

Minor CSF amendment

CSF Notification

New Ingredient:

Request Date:

New Ingredient:

Received Date:

Form A: Signature Date:

Form B: Signature Date:

View/Edit

Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1054



308/2E
April 21, 2011

Document Processing Desk (**FIN-LABEL**)
Office of Pesticide Programs (7504P)
U. S. Environmental Protection Agency
One Potomac Yard
2777 S. Crystal Drive
Arlington, VA 22202

Attention: Kathryn V. Montague (7505P)

GF-2654 (A.I. 2,4-D)
EPA REGISTRATION NUMBER: 62719-634
SUBMISSION OF FINAL PRINTED MAIN LABELING

Enclosed is final printed labeling for GF-2654 herbicide based on EPA-accepted labeling dated April 14, 2011 with conditions of acceptance.

Contents of Submission

- Transmittal document (this letter)
- Label entitled GF-2654 (K1A/GF-2654/FPI/04-21-11) (32 Pages plus Registration Notes) (1 Copy)
- Complimentary copy of EPA stamped-accepted label dated April 14, 2011

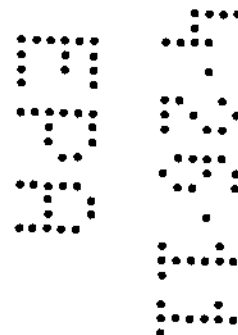
If you require further information, please contact Cindy Loy, Regulatory Specialist at (317) 337-4655.

Sincerely,

A handwritten signature in cursive script that reads "Cindy Loy".

Diego Fonseca
Regulatory Leader
(317) 337-4693
(317) 337-4649 (FAX)

Enclosures



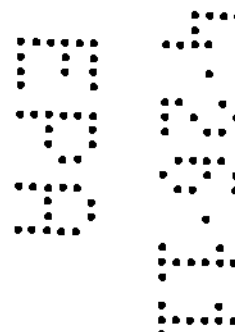
GF-2654

EPA Reg. No. 62719-634

Registration Notes:

Final printed Section 3 label based on EPA accepted text dated April 14, 2011 with the following conditions of acceptance:

1. Added EPA Reg. No. 62719-634. The establishment number and net contents will be added at the time of production.
2. Cereal Grains: Added "Maximum single postemergence application rate is 2.63 pints of GF-2654 (1.25 lb of acid equivalent) per acre." and "Maximum single preharvest application rate is 1.05 pints of GF-2654 (0.5 lb of acid equivalent) per acre." to Restrictions.
3. Corn: (1) In Restrictions for field corn and popcorn, added "Maximum single preplant or preemergence application rate is 2.11 pints of GF-2654 (1 lb of acid equivalent) per acre.", "Maximum single postemergence application rate is 1.1 pints of GF-2654 (0.5 lb of acid equivalent) per acre.", and "Maximum single preharvest application rate is 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre."; (2) in Restrictions for sweet corn, added "Maximum single preplant or preemergence application rate is 2.11 pints of GF-2654 (1 lb of acid equivalent) per acre." and "Maximum single postemergence application rate is 1.1 pints of GF-2654 (0.5 lb of acid equivalent) per acre."
4. Fallow Land and Crop Stubble: Added "Maximum single application rate is 4.2 pints of GF-2654 (2 lb of acid equivalent) per acre." to Restrictions.
5. Pome Fruit, etc.: (1) Did not add "Do not cut orchard floor forage for hay within 7 days of application.", "Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.", and "To avoid tree injury, . . ." because those statements are already on the label; (2) added "Maximum single application rate is 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre."
6. Rice: Added "Maximum single preplant application rate is 2.11 pints of GF-2654 (1 lb of acid equivalent) per acre." and "Maximum single postemergence application rate is 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre." to Restrictions.
7. Sugarcane: Added "Maximum single application rate is 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre." to Restrictions.
8. Forestry: Added "Limited to one basal spray or cut surface application per year.", "Limited to one injection application per year.", and "Maximum single application is 8.42 pints (2 mL) of GF-2654 (4 lb of acid equivalent) per injection site." to Restrictions.
9. Non-Cropland Areas: Added "Applications to non-cropland areas are not applicable to treatment of commercial timber or other plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes." to Restrictions.
10. Ornamental Turfgrass: Added "Maximum single application rate is 3.16 pints of GF-2644 (1.5 lb of acid equivalent) per acre." to Restrictions.
11. Warranty Disclaimer: Did not change "To the extent permitted by law." Per a January 25, 2007 conversation between Michele Knorr (EPA OGC) and Charley Kirk (DAS Legal), EPA has no objection with DAS using the phrase "To the extent permitted by law."
12. Limitation of Remedies: Did not change "To the extent permitted by law." Per a January 25, 2007 conversation between Michele Knorr (EPA OGC) and Charley Kirk (DAS Legal), EPA has no objection with DAS using the phrase "To the extent permitted by law."



(Base label):

GF-2654

Herbicide

For selective control of many broadleaf weeds in certain crops, orchard floors, fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Group	4	HERBICIDE
--------------	----------	------------------

Active Ingredient:

2,4-Dichlorophenoxyacetic acid, choline salt	56.3%
Other Ingredients	43.7%
Total	100.0%

2,4-dichlorophenoxyacetic acid - 38.4% - 3.8 lb/gal

Keep Out of Reach of Children

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Precautionary Statements**Hazards to Humans and Domestic Animals**

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed, Inhaled Or Absorbed Through The Skin

Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

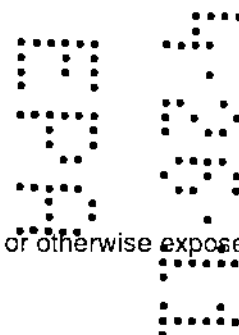
Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for category A on an EPA chemical resistance category selections chart.

All pilots must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

All mixers, loaders, flaggers, other applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves
- Protective eyewear
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate



See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)].

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

This product is toxic to fish and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Aquatic Weed Control: Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply the product in lanes separated by untreated strips that can be

treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2 to 3 week period following treatment. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Waters having limited and less dense weed infestations may not require partial treatments.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

(Storage and Disposal for rigid containers 5 gal or less)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for refillable rigid containers larger than 5 gal)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for nonrefillable rigid containers larger than 5 gal)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-634

EPA Est. _____

®Trademark of Dow AgroSciences LLC

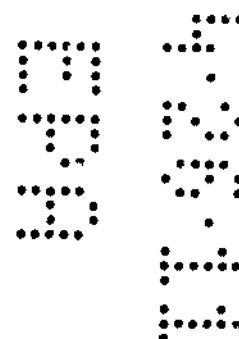
Produced for

Dow AgroSciences LLC

9330 Zionsville Road

Indianapolis, IN 46268

Net Contents _____



(cover):

GF-2654

Herbicide

For selective control of many broadleaf weeds in certain crops, orchard floors, fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Active Ingredient:

2,4-Dichlorophenoxyacetic acid,
choline salt56.3%

Other Ingredients.....43.7%

Total.....100.0%

2,4-dichlorophenoxyacetic acid - 38.4% - 3.8 lb/gal

Keep Out of Reach of Children

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to inside of label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

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Indianapolis, IN 46268

Net Contents _____

(Page 1 through end):

Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed, Inhaled Or Absorbed Through The Skin

Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for category A on an EPA chemical resistance category selections chart.

All pilots must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

All mixers, loaders, flaggers, other applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves
- Protective eyewear
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)].

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

This product is toxic to fish and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Aquatic Weed Control: Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2 to 3 week period following treatment. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Waters having limited and less dense weed infestations may not require partial treatments.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: Do not enter or allow people (or pets) to enter the treated area until sprays have dried.

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable containers larger than 5 gallons:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable containers 5 gallons or larger:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the

rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

GF-2654 herbicide is intended for selective control of many broadleaf weeds in certain crops (cereal grains, corn, grain sorghum, soybeans and sugarcane), orchard floors (pome fruit, including apples and pears, stone fruit, nut orchards and pistachios), fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Apply GF-2654 as a water or oil-water spray during warm weather when target weeds or woody plants are actively growing. Application under drought conditions will often give poor results. Use low spray pressure to minimize drift. Generally, the lower dosages specified on this label will be satisfactory for young, succulent growth of susceptible weed species. For less susceptible species and under conditions where control is more difficult, use higher specified rates. Deep-rooted perennial weeds such as Canada thistle and field bindweed and many woody plants usually require repeated applications for satisfactory control. Consult your State Agricultural Experiment stations or Extension Service Weed Specialists for recommendations from this label that best fit local conditions.

Use Precautions and Restrictions

Be sure that use of GF-2654 conforms to all application regulations.

Chemigation: Do not apply this product through any type of irrigation system.

Excessive amounts of 2,4-D in the soil may temporarily inhibit seed germination and plant growth.

Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in *Washington Toxics Coalition et al. v. EPA*, C01-0132C, (W.D. W.A.). For further information, please refer to EPA website: <http://www.epa.gov/espp/litstatus/wtc/index.htm>.

Herbicide Resistance Management

2,4-D, the active ingredient in this product, is a Group 4 herbicide (synthetic auxin). Some naturally occurring weed biotypes that are tolerant (resistant) to 2,4-D may exist due to genetic variability in a weed population. Where resistant biotypes exist, the repeated use of herbicides with the same mode of action can lead to the selection for resistant weeds. Certain agronomic practices reduce the likelihood that resistant weed populations will develop and can be utilized to manage weed resistance once it occurs.

To aid in the prevention of developing 2,4-D resistant weeds, Dow AgroSciences recommends the following practices:

Herbicide Selection:

- Rotate the use of 2,4-D with non-auxin (non-Group 4) herbicides.
- Utilize a broad spectrum soil-applied herbicide as a foundation treatment.
- Utilize tank mixes or sequential applications of herbicides with alternative modes of action.
- Avoid using more than two applications of a Group 4 herbicide, such as 2,4-D, within a single growing season unless mixed with another mode of action herbicide with overlapping spectrum.
- Apply full rates of 2,4-D at the specified time (correct weed size) to minimize escapes of tolerant weeds.

Crop Selection and Cultural Practices:

- Incorporate additional weed control practices whenever possible, such as mechanical cultivation, delayed planting, crop rotation, and weed-free crop seeds, as part of an integrated weed control program.
- Do not allow weed escapes to produce seeds, roots or tubers.
- Thoroughly clean plant residues from equipment before leaving fields suspected to contain resistant weeds.
- Scout fields after application to detect weed escapes or shifts in weed species.
- If resistance is suspected, treat weed escapes with an alternate mode of action or cultivation.
- Report any incidence of repeated non-performance of this product against a particular weed species to the local retailer, county extension agent, or Dow AgroSciences representative.

Because the presence of herbicide resistance in weed populations is difficult to detect prior to use, Dow AgroSciences accepts no liability for any losses that may result from the failure of this product to control weeds resistant to this mode of action. Incidents of non-performance should be reported to the local retailer, county extension agent, or Dow AgroSciences representative.

Spray Drift Management

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with other active ingredients that require a coarse or coarser spray, apply only as a coarse or coarser spray (ASABE S-572 standard) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a medium or finer spray, apply only as a medium or coarser spray (ASABE Standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a medium droplet spray, leave one swath unsprayed at the downwind edge of the treated field.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include cotton, okra, flowers, fruit trees, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Equipment

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Aerial Application

The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.

Groundboom Application

Do not apply with a nozzle height greater than 4 feet above the crop canopy.

Mixing Directions

GF-2654 – Alone

Mix GF-2654 only with water unless otherwise directed on this label. Add about half of the water to the mixing tank, then add GF-2654 with agitation, and finally the rest of the water with continuing agitation.

Note: Adding oil, wetting agent, or other surfactant to the spray mixture may increase effectiveness on weeds, but also may reduce selectivity to crops resulting in crop damage.

GF-2654 - Tank Mix

When tank mixing, read and follow the label of each tank mix product used for precautionary statements, directions for use, weeds controlled, and geographic and other restrictions. Use in accordance with the most restrictive of label limitations and precautions. Do not exceed any active ingredient's maximum use rates when tank mixing. Do not tank mix this product with any product containing a label prohibition against tank mixing with 2,4-D.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of this product and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing with Liquid Nitrogen Fertilizer: This product may be combined with liquid nitrogen fertilizer suitable for foliar application to accomplish broadleaf weed control and fertilization of corn, small grains or pastures in a single operation. Use GF-2654 in accordance with directions for these crops provided in this label. Use liquid fertilizer at rates recommended by the supplier or Extension Service Specialist. Test for mixing compatibility as described above before mixing in a spray tank. A compatibility aid such as Unite or Complex may be needed in some situations. Compatibility is best with liquid fertilizer solutions containing only nitrogen. Mixing with N-P-K solutions may not be satisfactory, even with the addition of a compatibility aid. Pre-mixing 1 part GF-2654 with up to 4 parts water may help in situations when mixing difficulty occurs.

Fill the tank about half full with the liquid fertilizer, then add the required amount of GF-2654 with agitation. Maintain agitation and complete filling the tank with liquid fertilizer. Apply immediately and continue agitation in spray tank during application. **Do not store the spray mixture.** Application during very cold weather (near freezing) is not advisable.

Sprayer Clean-Out

To avoid injury to desirable plants, thoroughly clean equipment used to apply this product before re-use or applying other chemicals.

1. Rinse and flush application equipment thoroughly after use at least three times with water. Dispose of all rinse water by applying to treatment area or applying to non-cropland area away from water supplies.
2. During the second rinse, add 1 quart of household ammonia for every 25 gallons of water or use commercially available tank cleaner solution. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.
6. If equipment is to be used to apply another pesticide or agricultural chemical to a 2,4-D susceptible crop, additional steps may be required to remove all traces of 2,4-D, including cleaning of disassembled parts and replacement of hoses or other fittings that may contain absorbed 2,4-D.

Application Directions

Apply with calibrated air or ground equipment using sufficient spray volume to provide adequate coverage of target weeds or as otherwise directed in specific use directions. For broadcast application, use a spray volume of 3 gallons or more per acre by air and 10 gallons or more per acre for ground equipment. Where states have regulations which specify minimum spray volumes, they must be observed. In general, increase spray volume as crop canopy, height and weed density increase in order to obtain adequate spray coverage. **Do not apply less than 3 gallons total spray volume per acre.**

Application Rate

The lower dosages given will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species and under conditions where control is more difficult, the higher dosages will be needed.

Application Timing

Apply GF-2654 during warm weather when weeds are young and actively growing.

Spot Treatments

To prevent misapplication, apply spot treatments with a calibrated boom or with hand sprayers using a fixed spray volume per 1000 sq ft as indicated below.

Hand-Held Sprayers: Hand-held sprayers may be used for spot applications of GF-2654. Take care to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based upon the application rate for an area of 1000 sq ft. Mix the amount of GF-2654 (fl oz or mL) corresponding to the desired broadcast rate in 1 to 3 gallons of spray. To calculate the amount of GF-2654 required for larger areas, multiply the table value (fl oz or mL) by the thousands of sq ft to be treated. An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

Rate Conversion Table for Spot Treatment:

Label Broadcast Rate (pint/acre)							
1/2	2/3	3/4	1	2	3	4	8
Equivalent Amount of GF-2654 per 1000 sq ft							
1/5 fl oz (5.5 mL)	1/4 fl oz (7.3 mL)	1/3 fl oz (8.3 mL)	3/8 fl oz (11 mL)	3/4 fl oz (22 mL)	1 fl oz (33 mL)	1 1/2 fl oz (44 mL)	3 fl oz (88 mL)

Band Application

GF-2654 may be applied as a band treatment. Use the formulas below to determine the appropriate rate and volume per treated acre.

$$\begin{array}{l}
 \text{Band width in inches} \\
 \text{-----} \times \text{Broadcast rate} = \text{Band rate per} \\
 \text{Row width in inches} \quad \text{per acre} \quad \text{treated acre}
 \end{array}$$

Band width in inches

----- X Broadcast volume Band volume
 Row width in inches per acre per treated acre

Weeds Controlled**Annual or Biennial Weeds**

beggarticks ¹	mousetail
bittercress, smallflowered	mustards (except blue mustard)
bitterweed	parsnip, wild
broomweed, common ¹	pennycress, field
burdock, common	pepperweed ¹
buttercup, smallflowered ¹	pigweeds (<i>Amaranthus</i> spp.) ¹
carpetweed	poorjoe
cinquefoil, common	primrose, common
cinquefoil, rough	purslane, common
cocklebur, common	pusley, Florida
coffeeweed	radish, wild
copperleaf, Virginia	ragweed, common
croton, Texas	ragweed, giant
croton, woolly	rape, wild
flixweed	rocket, yellow
galinsoga	salsify, common ¹
geranium, Carolina	salsify, western ¹
hemp, wild	shepherdspurse
horseweed (maretail)	sicklepod
jewelweed	smartweed (annual species) ¹
jimsonweed	sneezeweed, bitter
knotweed ¹	sowthistle, annual
kochia	sowthistle, spiny
lambsquarters, common	spanishneedles
lettuce, prickly ¹	sunflower
lettuce, wild	sweetclover
lupines	tansymustard
mallow, little ¹	thistle, bull
mallow, Venice ¹	thistle, musk ¹
marshelder	thistle, Russian (tumbleweed) ¹
morningglory, annual	velvetleaf
morningglory, ivy	vetches
morningglory, woolly	

Perennial Weeds

alfalfa ¹	eveningprimrose, cutleaf
artichoke, Jerusalem ¹	garlic, wild ¹
aster, many-flower ¹	goldenrod
Austrian fieldcress ¹	hawkweed, orange ¹
bindweed (hedge, field and European) ¹	healal
blue lettuce	ironweed, western
blueweed, Texas	ivy, ground ¹
broomweed	Jerusalem artichoke
bullnettle ¹	loco, bigbend
carrot, wild ¹	nettles (including stinging) ¹
catnip	onion, wild ¹
	pennywort

chicory	plantains
clover, red ¹	ragwort, tansy ¹
cofeeweed	sowthistle, perennial
cress, hoary ¹	thistle, Canada ¹
dandelion ¹	vervains ¹
docks ¹	waterplantain
dogbanes ¹	wormwood

¹May require application to small weeds, repeat applications, and/or use of higher specified rates of this product. Control at rates of 1 pint or less per acre may only be partial.

Specific Use Directions

Agricultural Use Requirements for Crops: For the following crop uses, follow PPE and re-entry instructions in the Agricultural Use Requirements section of this label.

Cereal Grains¹

¹Barley, millet, oats, rye, wheat

Application Timing	GF-2654 (pint/acre)	Use Directions
spring post-emergence barley, millet, rye, wheat,	2/3 - 1 1/3	Apply when weeds are small and actively growing. Use a lower rate in the rate range for small rapidly growing annual or biennial weeds and a higher rate in the rate range for perennial weeds or for annual or biennial weeds in advanced growth stages or when growing conditions are less than ideal. Postemergence: Apply after crop is fully tillered, (usually 4 to 8 inches tall), but not forming joints in the stems. Preharvest: Apply using air or ground equipment when crop is in dough stage of grain development to control or suppress weeds that might interfere with harvest.
oats	1/2 - 1	
preharvest (dough stage) all listed cereals	1	

Precautions:

- Up to 2.5 pints per acre may be applied postemergence to barley, millet, rye and wheat. However, there is greater risk of crop injury at rates greater than 1 1/3 pints per acre. Use such rates only when the need for weed control justifies additional risk to the crop.

Restrictions:

- Preharvest interval:** Do not apply within 14 days of grain harvest
- Do not apply more than a total of 3.68 pints of GF-2654 (1.75 lb of acid equivalent) per acre per use season.
- Maximum single postemergence application rate is 2.63 pints of GF-2654 (1.25 lb of acid equivalent) per acre.
- Maximum single preharvest application rate is 1.05 pints of GF-2654 (0.5 lb of acid equivalent) per acre.
- Limit use to no more than one post-emergence application and one preharvest application per crop season.
- Do not apply GF-2654 at the crop seedling stage of growth prior to tillering or from early boot (forming joints in the stem) through milk stage of grain development.** Consult state agricultural experiment station or extension service weed specialists for recommendations or suggestions to fit local conditions.
- Do not apply if crop is underseeded with legumes.

Corn (Field, Sweet, Popcorn)

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant (burndown) preemergence field, sweet, popcorn	1 - 2	Use a higher rate in the rate range for less susceptible weeds or cover crops, weeds in advanced stages of development, or under less favorable growth conditions. Preplant: Apply 7 to 14 days before planting corn to control emerged broadleaf weed seedlings or existing cover crops. Preemergence: Apply any time after planting, but before corn emerges to control broadleaf weed seedlings or existing cover crops.
postemergence field, sweet, popcorn annual broadleaf weeds crop up to 8 inches tall	1/2 - 1	Apply when weeds are small and corn is less than 8 inches tall (to top of crop canopy). If corn is more than 8 inches tall, use drop nozzles and directed sprays to keep spray off of foliage.
crop 8 inches tall to tasseling (directed spray only)	1	Treat perennial weeds when they are in bud to bloom stage. Do not apply from tasseling to hard dough stage.
perennial broadleaf weeds		
preharvest field and popcorn only	up to 3	Apply after corn is in hard dough (or denting) stage. Do not apply preharvest to sweet corn.

Precautions:

- Preplant or preemergence applications to light sandy soils is not recommended.
- Corn hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your Agricultural Experiment Station or Extension Service Weed Specialist for this information.
- **Note:** Corn treated with 2,4-D may exhibit stem brittleness for 8 to 10 days following application. During this period, the crop is more susceptible to stem breakage from cultivation or wind.

Restrictions:**Field Corn and Popcorn:**

- **Preharvest Interval:** Do not apply within 7 days of grain or fodder harvest.
- Do not make more than one preplant or preemergence application, one postemergence application, and one preharvest application per use season.
- Do not apply more than a total of 6.32 pints of GF-2654 (3 lb of acid equivalent) per acre per use season.
- Maximum single preplant or preemergence application rate is 2.11 pints of GF-2654 (1 lb of acid equivalent) per acre.
- Maximum single postemergence application rate is 1.1 pints of GF-2654 (0.5 lb of acid equivalent) per acre.
- Maximum single preharvest application rate is 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre.

Sweet Corn:

- **Preharvest Interval:** Do not apply within 45 days of ear harvest.
- Do not use treated crop as fodder for 7 days following application.
- Do not make a postemergence application within 21 days after a previous application.
- Do not make more than one preplant or preemergence application and one postemergence application per use season.
- Do not apply more than a total of 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre per use season.
- Maximum single preplant or preemergence application rate is 2.11 pints of GF-2654 (1 lb of acid equivalent) per acre.

- Maximum single postemergence application rate is 1.1 pints of GF-2654 (0.5 lb of acid equivalent) per acre.

Fallow Land¹ and Crop Stubble

¹ Fallow land is idle land, postharvest to crops or between crops.

Weeds	GF-2654 (pint/acre)	Use Directions
annual broadleaf	1 - 2	Use a lower rate in the rate range when weeds are small (2 to 3 inches tall) and actively growing. Use a higher in the rate range when weeds are larger and under less favorable growth conditions.
biennial broadleaf	2 - 4	Apply when musk thistles or other biennial species are in the seedling to rosette stage and before development of flower stalks. The lower rate in the rate range can be used in the spring during the rosette stage. Use the highest rate in the rate range in the fall or after flower stalks have developed.
perennial broadleaf		Apply when perennial weeds are in bud to early bloom stage or while in good vegetative growth.
wild garlic and onion in crop stubble	4	Apply to new regrowth of wild garlic or onion that occurs in the fall after harvest of small grains, corn or grain sorghum.

Precaution:

- For best weed control results, do not cultivate for at least two weeks after application or until top growth is dead.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of forage for hay harvest.
- **Minimum Treatment Interval:** Do not apply within 30 days of a previous application.
- Do not apply more than a total of 8.4 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Maximum single application rate is 4.2 pints of GF-2654 (2 lb of acid equivalent) per acre.
- Do not apply more than two times per year.

Planting in Treated Areas

Labeled Crops: Within 29 days after an application of this product, plant only those crops listed on this or other registered 2,4-D labels. Follow more stringent limitations, if any, provided in directions for specific crops. Labeled crops may be at risk of crop injury or loss if planted soon after application, especially during the first 14 days. Degradation factors described below should be considered in weighing this risk.

Other Crops: All other crops may be planted 30 days or more after application without concern for illegal residues in the planted crop. However, under certain conditions, there may be a risk of injury to susceptible crops. Degradation factors described below should be considered in weighing this risk. Under normal conditions, any crop may be planted without risk of injury if at least 90 days of soil temperatures above freezing have elapsed since application.

Degradation Factors: When planting into treated areas, the risk of crop injury is less if lower rates of product were applied and conditions following application have included warm, moist soil conditions that favor rapid breakdown of 2,4-D. Risk is greater if higher rates of product were applied and soil temperatures have been cold and/or soils have been excessively wet or dry in the days following application. Consult your local agricultural extension service or information about susceptible crops and typical conditions in your area.

Pome Fruit (Crop Group 11)¹, Stone Fruit (Crop Group 12)², Tree Nuts (Excluding Filberts)³ and Pistachio Orchard Floors

¹Pome fruit (crop group 11) including apple, crabapple, loquat, mayhaw, oriental pear, pear, quince

²Stone fruit (crop group 12) including apricot, chickasaw plum, damson plum, Japanese plum, nectarine, peach, plum, plumcot, prune, sweet cherry, tart cherry

³Tree nuts including almond, beech nut, black walnut, Brazil nut, butternut, cashew, chestnut, chinquapin, English walnut, hickory nut, macadamia nut (bush nut), pecan

Application Timing	GF-2654 (pint/acre)	Use Directions
postemergence annual and biennial weeds	1 - 2	For application to orchard floors, use coarse, low pressure sprays and sufficient water for thorough coverage of weeds.
perennial weeds	up to 4	Apply to annual weeds when small and actively growing. Apply to perennial weeds from bud to bloom stage.

Precautions:

- Avoid application immediately before irrigation and withhold irrigation for two days before and three days after application.
- Newly established trees or young orchards are more susceptible to 2,4-D injury. Apply only to orchards that have been established for at least one year and are in vigorous growth condition.

Restrictions:

• Preharvest Intervals:

Pome Fruit: Do not apply within 14 days of harvest.

Stone Fruit: Do not apply within 40 days of harvest.

Tree Nuts and Pistachio: Do not apply within 60 days of harvest.

• Minimum Treatment Interval:

Pome Fruit and Stone Fruit: Do not apply within 75 days of a previous application.

Tree Nuts and Pistachio: Do not apply within 30 days of a previous application.

- Do not cut orchard floor forage for hay within 7 days after application.
- Do not make more than two applications per year.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Maximum single application rate is 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre.
- To avoid tree injury, do not allow spray drift to contact foliage, fruit, stems, trunks or trees or exposed roots.
- Do not apply when orchards are blooming.
- Do not make orchard floor applications in areas with light sandy soils.

Rice

(Not for Use in California)

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant	1 - 2	Apply 2 to 4 weeks before planting rice to control emerged broadleaf weeds.
postemergence	1 - 2 ¹	Apply when rice is in late tillering stage and at the time of first joint development (first to second green ring).

¹Up to 3 pints per acre may be applied postemergence for difficult weed control situations. However, there is greater risk of crop injury at rates greater than 2 pints per acre. Such rates should be used only when the need for weed control justifies additional risk to the crop.

Precautions:

- Some rice varieties under certain conditions or stages of growth may be injured by 2,4-D. Before applying, consult local university or agricultural extension service specialists regarding for local treatment recommendations for various rice varieties.

Restrictions:

- **Preharvest Interval:** Do not apply within 60 days of harvest.
- Do not apply more than one preplant and one postemergence application per use season.
- Do not apply more than a total of 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre per use season.
- Maximum single preplant application rate is 2.11 pints of GF-2654 (1 lb of acid equivalent) per acre.
- Maximum single postemergence application rate is 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre.
- Do not apply at early seedling stage or after rice internodes exceed one-half inch or panicle initiation.

Sorghum - Grain Sorghum (Milo) and Forage

Application Timing	GF-2654 (pint/acre)	Use Directions
postemergence crop 6 - 8 inches tall	1/2 - 1	Apply when sorghum is 6 to 15 inches tall. If sorghum is more than 8 inches tall (to top of crop canopy), use drop nozzles and apply as a directed spray to keep spray off of foliage.
crop 8 - 15 inches tall (directed spray only)	3/4 - 1	

Precautions:

- Sorghum hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your agricultural experiment station or extension service weed specialist for this information.
- **Note:** Temporary crop injury can be expected under conditions of high soil moisture and high air temperatures. If it is necessary to apply GF-2654 under these conditions, use no more than 2/3 pint per acre.

Restrictions:

- **Preharvest Interval:** Do not apply within 30 days of grain harvest.
- Do not permit meat or dairy animals to consume treated crop as fodder or forage within 30 days after application.
- Do not apply more than a total of 2.1 pints of GF-2654 (1 lb of acid equivalent) per acre per use season.
- Do not apply more than one postemergence application per use season.
- **Do not apply during boot, or later stages of growth.**

Soybeans**(Preplant Burndown Only)**

Crop oil concentrates, agricultural surfactants and fluid fertilizers approved for use on growing crops may be added to spray mixtures of GF-2654 to increase the herbicidal effectiveness on certain weeds. Read and follow all directions and precautions on this label and on the label of each product added to the spray mixture. Refer to the Mixing Directions section for instructions for tank mixing and compatibility testing.

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant (burndown)	3/4 - 1	Apply not less than 15 days before planting soybeans, when weeds are small and actively growing. Use a higher rate in the rate range on larger weeds and when perennials are present. See Precautions and Restrictions below.
	1 - 2	Apply not less than 30 days before planting soybeans.

Application Timing	GF-2654 (pint/acre)	Use Directions
		when weeds are small and actively growing. Use a higher rate in the rate range on larger weeds and when perennials are present. See Precautions and Restrictions below.

Precautions:

- **Important Notice:** Unacceptable injury to soybeans planted in treated fields may occur. Whether soybean injury occurs and the extent of such injury will depend upon weather (temperature and rainfall) from herbicide application until soybean emergence and agronomic factors such as the amount of weed vegetation and previous crop residue present at the time of application. Injury is more likely under cool rainy conditions and where there is less weed vegetation and crop residue present.
- In treated fields, plant soybean seed as deep as practical, but not less than 1 inch deep. Adjust the planter, if necessary, to ensure that planted seed is adequately covered.

Restrictions:

- Do not disturb treated soil through tillage between application and planting of soybeans.
- Do not use on sandy soils with less than 1% organic matter.
- Do not make more than one application per season regardless of the application rate used.
- Do not apply GF-2654 as a preplant application in soybeans unless the results of soybean injury are acceptable, including possible stand loss and/or yield reduction.
- During the growing season following application, do not replant treated fields with crops other than those labeled for use with GF-2654.
- Do not apply more than a total of 2.1 pints of GF-2654 (1 lb of acid equivalent) per acre per use season.

Sugarcane

Application Timing	GF-2654 (pint/acre)	Use Directions
preemergence postemergence	2 - 4	Consult your agricultural experiment station or extension service weed specialist local recommendations. Preemergence: Apply to actively growing weeds before cane emerges. Postemergence: Apply after cane emerges through canopy closure. Use a higher rate in the rate range for perennial weeds and difficult to control species.

Restrictions:

- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Maximum single application rate is 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre.
- Do not harvest cane prior to maturity.
- Do not make more than one preemergence and one postemergence application per season.

Forestry, Rangeland, Established Grass Pastures, and Non-Cropland Areas

Agricultural Use Requirements for Forest Use (Except Tree Injection Use): For use in forests, follow PPE and re-entry instructions in the Agricultural Use Requirements section under the Directions for Use heading of this label.

Agricultural Use Requirements for Rangeland, Pasture, Forest (Tree Injection Only) and Non-Cropland Areas: When this product is applied to rangeland and established grass pastures not harvested for hay or seed; non-cropland areas, and when applied by tree injection in forest sites, follow re-entry

requirements given in the Non-Agricultural Use Requirements section under the Directions for Use heading of this label.

Forestry

Forest site preparation, forest roadsides, brush control, established conifer release (including Christmas trees and reforestation areas)

Application Method	GF-2654	Use Directions
annual weeds	2 - 4 pt/acre	Apply before the bud stage when weeds are small and growing actively. Apply when biennial and perennial species are in the seedling to rosette stage and before flower stalks appear. For difficult to control perennial broadleaf weeds and woody species, use up to 1 gallon of GF-2654 and 1 to 4 quarts of Garlon® 3A herbicide per acre. For conifer release, apply before budbreak of conifers in early spring when weeds are small and actively growing.
biennial and perennial broadleaf weeds susceptible woody plants	4 - 8 pt/acre	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the specified broadcast rate and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
conifer release species such as balsam fir black spruce jack pine ponderosa pine red pine red spruce white pine white spruce	1 1/2 - 3 qt/acre	To control competing hardwood species such as alder, aspen, birch, hazel, and willow, apply from mid- to late summer when growth of conifer trees has hardened off and woody plants are still actively growing. Apply with ground equipment using sufficient spray volume to ensure complete coverage. Because this treatment may cause occasional conifer injury, do not apply if such injury cannot be tolerated.
directed spray: conifer plantations including pine	4 qt/100 gal	Apply when brush or weeds are actively growing by directing the spray so as to avoid contact with conifer foliage and injurious amounts of spray. Apply in oil, oil-water, or water carrier in a spray volume of 10 to 100 gallons per acre.
basal spray (may also be used in rangeland, pastures, and non-cropland areas)	8 qt/100 gal or	Thoroughly wet the base and root collar of all stems until the spray begins to accumulate around the root collar at the ground line. Wetting stems with the mixture may also aid in control.
cut stump surfaces (may also be used in rangeland, pastures, and non-cropland areas)	2.5 fl oz/gal of water	Apply as soon as possible after cutting trees. Thoroughly soak the entire stump with the 2,4-D mixture including cut surface, bark and exposed roots.
frill and girdle (may also be used in rangeland, pastures, and non-cropland areas)		Cut frills (overlapping V-shaped notches cut downward through the bark in a continuous ring around the base of the tree) using an axe or other suitable tool. Treat freshly cut frills with as much of the 2,4-D mixture as they will hold.
tree injection (may also be	1 - 2 mL per	To control unwanted hardwood trees such as elm,

Application Method	GF-2654	Use Directions
used in rangeland, pastures, and non-cropland areas)	injection site	<p>hickory, oak, and sweetgum in forests and other non-crop areas, apply by injecting at a rate of 1 mL of undiluted GF-2654 per inch of trunk diameter at breast height (DBH) as measured approximately 4 1/2 ft above the ground. However, inject as close to the root collar as possible and the injection bit must penetrate the inner bark. Make applications throughout the year, but for best results, apply between May 15 and October 15. Do not treat maples during the spring sap flow.</p> <p>For hard to control species such as ash, maple, and dogwood, use 2 mL of undiluted GF-2654 per injection site or double the number of 1 mL injections.</p> <p>Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.</p>

Restrictions:

- Do not allow sprays to contact conifer shoot growth (current year's new growth) or injury may occur.
- Do not apply to nursery seed beds.
- For conifer release, do not use on plantations where pine or larch are among the desired species.
- For broadcast applications, do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per 12-month period.
- Limited to one broadcast application per year
- Limited to one basal spray or cut surface application per year.
- Limited to one injection application per year.
- For basal spray, cut surface stumps, and frill applications, do not apply more than 16.84 pints of GF-2654 (8 lb of acid equivalent) per 100 gallons of spray solution.
- Maximum single application is 8.42 pints (2 mL) of GF-2654 (4 lb of acid equivalent) per injection site.

Rangeland and Established Grass Pastures (Including Perennial Grasslands not in Agricultural Production Such as Conservation Reserve Program Acres)

Weeds or Woody Plants	GF-2654 (pint/acre)	Use Directions
annual broadleaf weeds	2	For best results, apply before the bud stage when weeds are small and growing actively. Apply before flower stalks appear, when musk thistles or other biennial species are in the seedling to rosette stage. Refer to the Weeds Controlled section for a listing of susceptible weed species and weeds that may be only partially controlled and require repeat applications and/or use of higher specified rates, even under ideal conditions of application.
biennial and perennial broadleaf weeds	2 - 4	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate specified for this treatment site and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.

Weeds or Woody Plants	GF-2654 (pint/acre)	Use Directions
tree injection application		See instructions for tree injection application in Forestry section.
wild garlic and wild onion	4	Make three applications (fall-spring-fall or spring-fall-spring) starting in late fall or early spring.
broadleaf weed control in newly sprigged coastal bermudagrass	2 - 4	Apply either preemergence or postemergence. Follow use directions for annual, biennial and perennial broadleaf weed control above.
sand shinnery oak sand sagebrush	2	Sand shinnery oak: Apply by aircraft between May 15 and June 15. Sand sagebrush: Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre.
big sagebrush rabbitbrush	4	Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre. Re-treatment may be needed.
buckbrush chamise chaparral species coastal sage coyotebrush manzanita		Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use water or 1:4 oil-water emulsion as carrier and a spray volume of 5 to 10 gallons per acre. Re-treatment may be needed.
southern wild rose broadcast application	up to 4	Broadcast: Apply in a spray volume of 5 gallons or more per acre by aircraft or 10 gallons or more per acre by ground equipment. Spot treatment: Apply when foliage is well developed. Thorough coverage is required. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. Two or more treatments may be required.
spot treatment	1.28 fl oz/gal of spray solution	Do not exceed 4 pints per acre per application.

Precautions:

- If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of forage harvest. For program lands, such as CRP, consult program rules to determine whether grass or hay may be used. The more restrictive requirements of the program rules or this label must be followed.
- **Minimum Treatment Interval:** Do not apply within 30 days of a previous application.
- Do not use on bentgrass, alfalfa, clover, or other legumes.
- Do not use on newly seeded areas until grass is well established.
- Do not use from early boot to milk stage where grass seed production is desired.
- For grazed areas, the maximum use rate is 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application.

- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Do not make more than two applications per season.
- For susceptible annual and biennial broadleaf weeds: Do not apply more than 2 pints of GF-2654 (1 lb of acid equivalent) per acre per application.
- For moderately susceptible biennial, perennial broadleaf weeds and difficult to control weeds and woody plants: Do not apply more than 4 pints of GF-2654 (2 lb of acid equivalent) per acre per application.
- Spot treatment: Do not apply more than 4 pints of GF-2654 (2 lb of acid equivalent) per acre.

Non-Cropland Areas

Such as fencerows, hedgerows, roadsides, drainage ditches, rights-of way, utility power lines, railroads, airports, and other non-cropland areas

Application Method	GF-2654 (pint/acre)	Use Directions
annual broadleaf weeds	2 - 4	Apply before the bud stage when annual weeds are small and growing actively. Biennial and perennial weeds should be rosette to bud stage, but not flowering at the time of application. For difficult to control perennial broadleaf weeds and woody species, tank mix up to 1 gallon of GF-2654 plus 1 to 4 quarts of Garlon 3A per acre. For ground application: (High volume) apply a total of 100 to 400 gallons per acre; (low volume) apply a total of 10 to 100 gallons per acre. For helicopter: Apply a total of 5 to 30 gallons per acre spray volume.
biennial and perennial broadleaf weeds	4	
susceptible woody plants on rights-of-way	4 - 8	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate specified for this treatment site and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
tree injection application		See instructions for tree injection application in Forestry section.
southern wild rose broadcast application	up to 4	Broadcast: Apply in a spray volume of 10 gallons or more per acre by ground equipment. Apply when foliage is well developed. Thorough coverage is required. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. Two or more treatments may be required.
spot treatment	1.28 fl oz/gal of spray solution	

Precautions:

- Bentgrass, St. Augustine, clover, legumes and dichondra may be severely injured or killed by this treatment.

Restrictions:

- Do not apply to newly seeded areas until grass is well established.

- Applications to non-cropland areas are not applicable to treatment of commercial timber or other plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.
- **Annual and perennial weeds:**
Minimum Treatment Interval: Do not reapply to a treated area within 30 days of a previous application. Do not apply more than 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application. Do not make more than two applications per season.
- **Woody plants:**
Do not apply more than 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season. Do not make more than one application per season.

Turfgrass

Turfgrass Grown for Seed or Sod Farms

Agricultural Use Requirements: When used in grass grown for seed or sod farms, follow PPE and re-entry instructions in the Agricultural Use Requirements section of this label.

Application Timing	GF-2654 (pint/acre)	Use Directions
turfgrass grown for seed (postemergence) seedling grass (five-leaf stage or later)	3/4 - 1	Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Do not apply to newly seeded grasses until well established (five-leaf stage or later) and then use a maximum of 1 pint per acre. Cool season turfgrass is tolerant of higher rates.
well-established grasses	1 - 4	Do not apply to turfgrass in the early boot through milk stage if seed production is desired. When turfgrass is well established, higher rates of up to 4 pints per acre may be applied for control of hard to kill annual or perennial weeds.
sod farms (postemergence)	2 - 4	Deep-rooted perennials such as bindweed and Canada thistle may require repeat applications. Avoid mowing sod farms for 1 to 2 days before or after application. Delay irrigation until the day following application.

Precautions:

- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and, with fall application, reseed in the spring.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of cutting forage for hay.
- **Minimum Treatment Interval:** Do not reapply to a treated area within 21 days of a previous application.
- Do not use on creeping grasses such as bent except as a spot treatment.
- Do not use on injury-sensitive southern turfgrass such as St. Augustinegrass.
- Do not use on dichondra or other herbaceous groundcovers. Legumes may be damaged or killed.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Maximum of 2 lb acid equivalent (4.2 pints of GF-2654) per acre per application.
- Do not make more than two applications of GF-2654 per use season.

Ornamental Turfgrass (Excluding Turfgrass Grown for Seed or Sod Farms)

(Includes lawns, golf courses, cemeteries and parks, airfields, roadsides, vacant lots, drainage ditch banks)

Use Requirements for Ornamental Turfgrass Areas: When this product is applied to ornamental turfgrass areas, follow PPE and reentry instructions in the Non-Agricultural Use Requirements section of this label.

Application Timing	GF-2654 (pint/acre)	Use Directions
ornamental turfgrass (postemergence) seedling grass (five-leaf stage or later)	3/4 - 1	Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Deep-rooted perennial weeds such as bindweed and Canada thistle may require repeat applications. Do not apply to newly seeded turfgrass until well established (five-leaf stage or later) and then use a maximum of 1 pint per acre. Cool season turfgrass is tolerant of higher rates.
well-established turfgrass	2 - 3	
biennial and perennial broadleaf weeds	3	

Precautions:

- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and, with fall application, reseed in the spring.

Restrictions:

- **Minimum Treatment Interval:** Do not reapply within 21 days of a previous application.
- Do not use on creeping grasses such as bent except as a spot treatment.
- Do not use on injury-sensitive southern turfgrass such as St. Augustinegrass.
- Do not use on dichondra or other herbaceous groundcovers. Legumes may be damaged or killed.
- Do not make more than two broadcast applications per year per treatment site (does not include spot treatments).
- Do not apply more than a total of 6.32 pints of GF-2654 (3 lb of acid equivalent) per acre per year.
- Maximum single application rate is 3.16 pints of GF-2644 (1.5 lb of acid equivalent) per acre.

Aquatic Uses

Use Requirements for Aquatic Areas: When this product is applied to aquatic areas, follow PPE and reentry instructions in the Non-Agricultural Use Requirements section of this label.

Banks of Irrigation Canals and Ditches

Weeds	GF-2654 (pint/acre)	Use Directions
annual	2 - 4	Apply using low pressure spray (10 to 40 psi) in a spray volume of 20 to 100 gallons per acre using power operated spray equipment. Apply when wind speed is low, 5 mph or less. Apply working upstream to avoid accidental concentration of spray into water. Do not spray cross-stream to opposite banks and avoid boom spraying over water surface. When spraying shoreline weeds, allow no more than a 2-foot overspray onto water surface with an average of less than 1 foot of overspray to prevent significant water contamination.

Weeds	GF-2654 (pint/acre)	Use Directions
biennial and perennial broadleaf susceptible wood plants	4	Apply before the bud stage when weeds are small and growing actively. Apply before flower stalks appear when biennial and perennial species are in the seedling to rosette stage. For hard to control weeds, a repeat application after 30 days at the same rate may be needed. For woody species and patches of perennial weeds, mix 1 gallon of GF-2654 per 64 to 150 gallons of total spray. Wet foliage by applying about 3 to 4 gallons of spray per 1000 sq ft (10.5 X 10.5 steps).

Restrictions:

- Do not make more than two treatments per season or reapply within 30 days.
- Use 2 gallons or more of spray solution per acre.
- Do not apply more than 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application or more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.

Do not use on small canals with a flow rate less than 10 cubic feet per second (CFS) where water will be used for drinking purposes. CFS may be estimated by using the formula below. Determine the approximate velocity needed for the calculation by observing the length of time that it takes a floating object to travel a defined distance. Divide the distance (ft) by the time (sec) to estimate velocity (ft per sec). Repeat three times and use the average to calculate CFS.

Average Width (ft) x Average Depth (ft) x Average Velocity (ft per sec) = CFS

Ditchbank Weeds: Do not spray cross-stream to opposite bank. Do not allow boom spray to be directed onto water.

Shoreline Weeds: Boom spraying onto water surface must be held to a minimum and allow no more than a 2-foot overspray onto water with an average of less than 1 foot overspray to prevent introduction of greater than negligible amounts of chemical into the water.

Ponds, Lakes, Reservoirs, Marshes, Bayous, Drainage Ditches, Canals, Rivers and Streams That are Quiescent or Slow Moving, Including Programs of the Tennessee Valley Authority

Notice to Applicators: Before application, coordination and approval of local and state authorities may be required, either by letter or agreement or issuance of special permits for aquatic applications.

Emergent and Floating Aquatic Weeds Including Water Hyacinth (*Eichornia crassipe*):

Application Rate: 2 to 4 quarts per acre.

Application Timing: Spray weed mass only. Apply when water hyacinth plants are actively growing. Reapply as necessary to kill regrowth and plants missed in previous operation. Use the 4 quart per acre rate when plants are mature or when weed mass is dense.

Surface Application: Use power operated sprayers with boom or spray gun mounted on boat, tractor or truck. Thorough wetting of foliage is essential for maximum control. Use 100 to 400 gallons of spray mixture per acre. Take special precautions such as use of low pressure, large nozzles and spray thickening agents to avoid spray drift to susceptible crops. Follow label directions for use of any drift control agent.

Aerial Application: Use drift control spray equipment or thickening agent mixed in the spray mixture. Apply 1 gallon of GF-2654 per acre with standard boom systems using a minimum spray volume of 5

gallons per acre. For Microfoil drift control spray systems, apply GF-2654 in a total spray volume of 12 to 15 gallons per acre.

Restrictions for Surface Applications to Emergent Aquatic Weeds:

- **Minimum Treatment Interval:** Minimum of 21 days between applications.
- Do not apply more than 8.42 pints of GF-2654 per acre (4 lb of acid equivalent) per surface acre.
- Spot treatments are permitted.
- Limited to two applications per season.

Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2- to 3-week period following treatment. Waters having limited and less dense weed infestations may not require partial treatments. Other local factors such as water exchange and sediment load can also influence the dissolved oxygen level. Coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for aquatic applications.

Water Use:**1. Water for irrigation or sprays:**

- A. If treated water is intended to be used only for crops or non-cropland areas that are labeled for direct treatment with 2,4-D such as pastures, turfgrass or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at anytime after the 2,4-D aquatic application.
- B. Due to potential phytotoxicity considerations, the following restrictions are applicable: If treated water is intended to be used to irrigate or mix sprays for plants grown in commercial nurseries and greenhouses, and other plants or crops that are not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:
 - i. A setback distance from functional water intake(s) of ≥ 600 ft was used for the application, or,
 - ii. A waiting period of 7 days from the time of application has elapsed, or,
 - iii. An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. Wait at least 3 days after application before initial sampling at water intake.

2. Drinking water (potable water):

- A. Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits. The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb. Applicators should consider the unique characteristics of the treated waters to assure that 2,4-D concentrations in potable water do not exceed 70 ppb at the time of consumption.
- B. For floating and emergent weed applications, the drinking water setback distance from functioning potable water intakes is ≥ 600 ft.
- C. If no setback distance of ≥ 600 ft is used for the application, applicators or the authorizing organization must provide a drinking water notification prior to a 2,4-D application to the party responsible for a public water supply or to individual private water users. Notification to the party responsible for a public water supply or to individual private water users must be done in a manner to assure that the party is aware of a water use restriction when this product is applied to potable water.

The following is an example of notification via posting, but other methods of notification that convey the above restrictions may be used and may be required in some cases under state or local law or as a condition of a permit.

Example: Locate posting notification every 250 feet including the shoreline of the treated area and up to 250 feet of shoreline past the application site to include immediate public access points. Posting must include the day and time of application. Posting may be removed if analysis of a sample collected at the intake 3 days or more following application shows that the concentration in

the water is less than 70 ppb (100 ppb for irrigation or sprays), or after 7 days following application, whichever occurs first.

Text of Notification: Wait 7 days before diverting functioning surface water intakes from the treated aquatic site to use as drinking water, irrigation, or sprays, unless water at functioning drinking water intakes is tested at least 3 days after application and is demonstrated by assay to contain not more than 70 ppb 2,4-D (100 ppb for irrigation or sprays).

Application Date: _____ Time: _____.

- D. Following each application of this product, do not use treated water for drinking water unless one of the following restrictions has been observed:
- A setback distance from functional water intake(s) of ≥ 600 ft was used for the application, or,
 - A waiting period of at least 7 days from the time of application has elapsed, or,
 - An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less at the water intake. Sampling for drinking water analysis should occur no sooner than 3 days after a 2,4-D application. Analysis of samples must be completed by a laboratory that is certified under the Safe Drinking Water Act to perform drinking water analysis using a currently approved version of analytical Method Number 515, 555, other methods for 2,4-D as may be listed in Title 40 CFR Part 141.24, or Method Number 4015 (immunoassay of 2,4-D) from U.S. EPA Test Methods for Evaluating Solid Waste SW-846.
- E. **Note:** Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.
- F. Drinking water setback distances do not apply to terrestrial applications of 2,4-D adjacent to water bodies with potable water intakes.

Submerged Aquatic Weeds Including Eurasian Water Milfoil (*Myriophyllum spicatum*):

Sites	Maximum Application Rate ¹	Use Directions
aquatic weed control in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, rivers and streams that are quiescent or slow moving, including programs of the Tennessee Valley Authority	2.84 gallons (10.8 lb of acid equivalent) per acre foot	<p>Application Timing: For best results, apply in spring or early summer when aquatic weeds appear. Check for weed growth in areas heavily infested the previous year. A second application may be needed when weeds show signs of recovery, but no later than mid-August in most areas.</p> <p>Subsurface Application: Apply undiluted GF-2654 directly to the water through a boat mounted distribution system. Treat shoreline areas by subsurface injection application by boat to avoid aerial drift.</p> <p>Surface Application: Use power operated boat mounted boom sprayer. If rate is less than 5 gallons per acre, dilute to a minimum spray volume of 5 gallons per surface acre.</p> <p>Aerial Application: Use drift control spray equipment or thickening agents mixed with sprays to reduce drift. Apply through standard boom systems in a minimum spray volume of 5 gallons per surface acre. For Microfoil drift control spray systems, apply GF-2654 in a total spray volume of 12 to 15 gallons per acre. Apply to attain a concentration of 2 to 4 ppm (see table below).</p>

¹GF-2654 contains 3.8 lb of acid equivalent per gallon of product.

Table 1: Amount to Apply for a Target Subsurface Concentration

Surface Area (acre)	Average Depth (ft)	For typical conditions – 2 ppm (2,4-D a.e./acre)	For typical conditions – 2 ppm (GF-2654 gal/acre)	For difficult conditions – 4 ppm ¹ (2,4-D a.e./acre)	For difficult conditions – 4 ppm ¹ (GF-2654 gal/acre)
1	1	5.4	1.42	10.8	2.84
	2	10.8	2.84	21.6	5.68
	3	16.2	4.26	32.4	8.53
	4	21.6	5.68	43.2	11.37
	5	27.0	7.10	54.0	14.21

¹ Examples include spot treatments of pioneer colonies of eurasian water milfoil and certain difficult to control aquatic species.

Restrictions for Aquatic Sites With Submerged Aquatic Weeds:

- **Minimum Treatment Interval:** Do not apply within 21 days of previous application.
- Limited to two applications per season.
- Do not exceed 10.8 lb acid equivalent per acre foot.

Fish breathe oxygen in the water and a water-oxygen ratio must be maintained. Decaying weeds use up oxygen, but during the period when applications should be made, the weed mass is fairly sparse and the weed decomposition rate is slow enough that the water-oxygen ratio is not disturbed by treating the entire area at one time. If treatments must be applied later in the season when the weed mass is dense and repeat treatments are needed, apply product in lanes, leaving buffer strips which can then be treated when vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2- to 3-week period following treatment.

When treating moving bodies of water, apply while traveling upstream to prevent concentration of 2,4-D downstream from the application.

Coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for such use.

Water Use:

1. Water for irrigation or sprays:

- If treated water is intended to be used only for crops or non-cropland areas that are labeled for direct treatment with 2,4-D such as pastures, turfgrass or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at anytime after the 2,4-D aquatic application.
- Due to potential phytotoxicity and/or residue considerations, the following restrictions are applicable. If treated water is intended to be used to irrigate or mix sprays for unlabeled crops, non-cropland areas, or other plants not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:
 - A setback distance described in the Drinking Water Setback Table was used for the application, or,
 - A waiting period of 21 days from the time of application has elapsed, or,
 - An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. See Table 3 for the waiting period after application but before taking the initial sampling at water intake.

2. Drinking water (potable water):

- Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits. The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb. Applicators should consider the unique characteristics of the treated waters to assure that 2,4-D concentrations in potable water do not exceed 70 ppb at the time of consumption.

- B. For submerged weed applications, the drinking water setback distances from functioning potable water intakes are provided in Table 2 Drinking Water Setback Distance (below).
- C. If no setback distance from the Drinking Water Setback Table (Table 2) is used for the application, applicators or the authorizing organization must provide a drinking water notification and an advisory to shut off all potable water intakes prior to a 2,4-D application. Notification to the party responsible for a public water supply or to individual private water users must be done in a manner to assure that the party is aware of the water use restrictions when this product is applied to potable water.

The following is an example of notification via posting, but other methods of notification that convey the above restrictions may be used and may be required in some cases under state or local law or as a condition of a permit.

Example: Posting notification should be located every 250 feet including the shoreline of the treated area and up to 250 feet of shoreline past the application site to include immediate public access points. Posting must include the day and time of application. Posting may be removed if analysis of a sample collected at the intake no sooner than stated in Table 3 (below) shows that the concentration in the water is less than 70 ppb (100 ppb for irrigation or sprays), or after 21 days following application, whichever occurs first.

Text of Notification: Wait 21 days before diverting functioning surface water intakes from the treated aquatic site to use as drinking water, irrigation, or sprays, unless water at functioning drinking water intakes is tested no sooner than (insert days from Table 3) and is demonstrated by assay to contain not more than 70 ppb 2,4-D (100 ppb for irrigation or sprays).

Application Date: _____ Time: _____ .

- D. Following each application of this product, do not use treated water for drinking water unless one of the following restrictions has been observed:
- A setback distance described in the Drinking Water Setback Distance Table was used for the application, or,
 - A waiting period of at least 21 days from the time of application has elapsed, or,
 - An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less at the water intake. Sampling for drinking water analysis should occur no sooner than stated in Table 3. Analysis of samples must be completed by a laboratory that is certified under the Safe Drinking Water Act to perform drinking water analysis using a currently approved version of analytical Method Number 515, 555, other methods for 2,4-D as may be listed in Title 40 CFR, Part 141.24, or Method Number 4015 (immunoassay of 2,4-D) from U.S. EPA Test Methods for Evaluating Solid Waste SW-846.
- E. **Note:** Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.
- F. Drinking water setback distances do not apply to terrestrial applications of 2,4-D adjacent to water bodies with potable water intakes.

Table 2: Drinking Water Setback Distance for Submerged Weed Applications

Application Rate and Minimum Setback Distance From Functioning Potable Water Intake (ft)			
1 ppm ¹	2 ppm ¹	3 ppm ¹	4 ppm ¹
600	1200	1800	2400

¹ ppm acid equivalent target water concentration

Table 3: Sampling for Drinking Water Analysis After 2,4-D Application for Submerged Weed Applications

Minimum Days After Application Before Initial Water Sampling at the Functioning Potable Water Intake			
1 ppm ¹	2 ppm ¹	3 ppm ¹	4 ppm ¹

5	10	10	14
---	----	----	----

ppm acid equivalent target water concentration

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT PERMITTED BY LAW, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitation of Remedies in any manner.

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U.S. ENVIRONMENTAL PROTECTION
AGENCY

Office of Pesticide Programs
Registration Division (7505P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

EPA Reg. Number:

62719-634

Date of Issuance:

APR 14 2011

NOTICE OF PESTICIDE:

☒ Registration
☐ Reregistration
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

GF-2654 Herbicide

Received

APR 20 2011

Registration

Name and Address of Registrant (include ZIP Code):

Dow AgroSciences, LLC
9330 Zionsville Road
Indianapolis, IN 46268-1054

COMPLIMENTARY
COPY

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

- 1) Submit and/or cite all data required for registration/reregistration review of your product when the Agency requires all registrants of similar products to submit data. If required, failure to submit acceptable data to fulfill these requirements may result in registration cancellation in accordance with FIFRA section 6(e).
- 2) The text "EPA Reg. No. 62719-634" must be added to the labeling. Assure that the EPA Establishment Number and Net Contents are also on the label.
- 3) For the purposes of clarity, the phrase "...non-cropland and aquatic areas" in the product description under the product name at the top of page 1 must be changed to read ".....non-cropland and aquatic areas as listed."
- 4) You must generate one-year storage stability (830.6317) and corrosion characteristics (830.6320) data on the product. The observations should be made at 0, 3, 6, 9, and 12 month intervals. The results must be submitted to the Agency in electronic and hard copy format within 15 months of the date on this notice.

SEE NEXT PAGE FOR ADDITIONAL COMMENTS

Signature of Approving Official:

Kathryn V. Montague
Product Manager 23
Herbicide Branch
Registration Division (7505P)

Date:

APR 14 2011

5) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restriction established by the 2,4-D RED must be added to the **Cereal Grains (barley, millet, oats, rye, and wheat)** section on page 14:

Postemergence: Maximum of 1.25 lbs ae/acre per application.

Preharvest: Do not exceed 0.5 lbs ae/acre per application.

Note to Registrant: Per the RED, 1.25 lbs and 0.5 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

6) In the Specific Use Directions for **Corn (field, sweet, and popcorn)** on page 15, the following changes must be made.

- a) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restrictions established by the 2,4-D RED must be added to the **field corn and popcorn** restrictions:

“Preplant or preemergence: Maximum of 1.0 lb ae/acre per application.

Postemergence: Maximum of 0.5 lb ae/acre per application.

Preharvest: Maximum of 1.5 lbs ae/acre per application.”

- b) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restrictions established by the 2,4-D RED must be added to the **Sweet Corn** restrictions:

“Preplant or preemergence: Maximum of 1.0 lb ae/acre per application.

Postemergence: Maximum of 0.5 lb ae/acre per application.”

Note to Registrant: Per the RED, the 0.5 lbs, 1.0 lb, and 1.5 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

7) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restriction established by the 2,4-D RED must be added to the **Fallow Land and Crop Stubble** restrictions on page 16:

“Maximum of 2.0 lbs ae/acre per application.”

Note to Registrant: Per the RED, the 2.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

SEE NEXT PAGE

8) Before the last six bullets in the **Pome Fruit, Stone Fruit, Tree Nuts (excluding Filberts), and Pistachio Orchard Floors** section on page 16-17, you must add a header that reads "For All Uses". Per the 2,4-D RED, you must also add the text "Maximum of 2.0 lbs ae/acre per application." The text must appear as follows:

"For All Uses

- Do not cut orchard floor forage for hay within 7 days of application.
- Maximum of 2.0 lbs ae/acre per application.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- To avoid tree injury....."

Note to Registrant: Per the RED, the 2.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

9) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restriction established by the 2,4-D RED must be added to the **Rice** restrictions at the top of page 18:

- "Maximum of 1.0 lbs ae/acre per preplant application.
- Maximum of 1.5 lbs ae/acre per postemergence application.

Note to Registrant: Per the RED, the 1.0 lbs and 1.5 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

10) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restriction established by the 2,4-D RED must be added to the **Sugarcane** restrictions on page 19:

- "Maximum of 2.0 lbs ae/acre per application."

Note to Registrant: Per the RED, the 2.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

11) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The text below must be added to the **Forestry** restrictions on page 21:

- "Limit of one basal spray or cut surface application per year."
- "Limit to one injection application per year.
- Maximum of 2 ml of 4.0 lbs ae formulation per injection site."

Note to Registrant: Per the RED, the 4.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

SEE NEXT PAGE

12) Per the 2,4-D Reregistration Eligibility Document (RED), the following statement must be included on the label. The text below must be added to the **Non-Cropland** restrictions on page 23.

"Applications to non-cropland areas are not applicable to treatment of commercial timber or other plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes."

13) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The text below must be added to the **Ornamental Turf** restrictions on page 25.

"Maximum of 1.5 lbs ae/acre per application."

Note to Registrant: Per the RED, the 4.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

14) In the Warranty Disclaimer on page 30-31, replace the phrases "TO THE EXTENT PERMITTED BY LAW" and "To the extent permitted by law" with "TO THE EXTENT CONSISTENT WITH APPLICABLE LAW" or "To the extent consistent with applicable law".

15) NOTE: While no additional data is being requested at this time, marketing claims made on the pesticide label must be substantiated by data maintained in your files. If data supporting marketing claims made on the product label is not available then those claims must be removed.

16) NOTE: Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, ... claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

17) Submit one (1) copy of the revised final printed label before the product is released for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

(Base label):

Received

APR 20 2011

Registration

GF-2654**Herbicide**

For selective control of many broadleaf weeds in certain crops, orchard floors, fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Group	4	HERBICIDE
--------------	----------	------------------

Active Ingredient:

2,4-Dichlorophenoxyacetic acid,
choline salt 56.3%
Other Ingredients 43.7%
Total 100.0%

2,4-dichlorophenoxyacetic acid - 38.4% - 3.8 lb/gal

ACCEPTED
with **COMMENTS**
In EPA Letter Dated:

APR 14 2011

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

602719-634

Keep Out of Reach of Children**DANGER PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Precautionary Statements**Hazards to Humans and Domestic Animals**

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed, Inhaled Or Absorbed Through The Skin

Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for category A on an EPA chemical resistance category selections chart.

All pilots must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

All mixers, loaders, flaggers, other applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves
- Protective eyewear
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

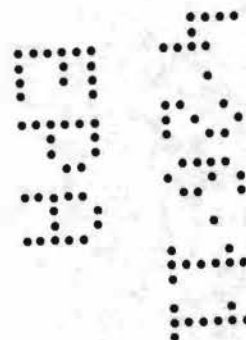
K1A / GF-2654 / Prop Sec 3 / 09-29-10
file: GF-2654-XXX 29Sep10d.doc

GF-2654

EPA Reg. No. 62719-XXX

Registration Notes:

Proposed Section 3 label.



See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)].

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

This product is toxic to fish and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Aquatic Weed Control: Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the

infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2 to 3 week period following treatment. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Waters having limited and less dense weed infestations may not require partial treatments.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

(Storage and Disposal for rigid containers 5 gal or less)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for refillable rigid containers larger than 5 gal)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. Mechanically, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then, offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for nonrefillable rigid containers larger than 5 gal)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

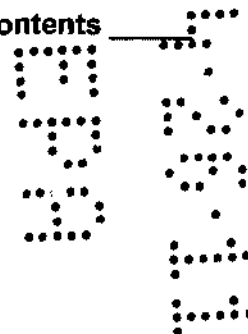
EPA Reg. No. 62719-XXX

EPA Est. _____

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Produced for
Dow AgroSciences LLC
 9330 Zionsville Road
 Indianapolis, IN 46268

Net Contents



(cover):

GF-2654

Herbicide

For selective control of many broadleaf weeds in certain crops, orchard floors, fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Active Ingredient:

2,4-Dichlorophenoxyacetic acid,	
choline salt	56.3%
Other Ingredients	43.7%
Total	100.0%

2,4-dichlorophenoxyacetic acid - 38.4% - 3.8 lb/gal

Keep Out of Reach of Children

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to inside of label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-XXX

EPA Est. _____

®Trademark of Dow AgroSciences LLC

Produced for**Dow AgroSciences LLC****9330 Zionsville Road****Indianapolis, IN 46268****Net Contents** _____

(Page 1 through end):

Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed, Inhaled Or Absorbed Through The Skin

Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for category A on an EPA chemical resistance category selections chart.

All pilots must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

All mixers, loaders, flaggers, other applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves
- Protective eyewear
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)].

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

This product is toxic to fish and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Aquatic Weed Control: Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2 to 3 week period following treatment. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Waters having limited and less dense weed infestations may not require partial treatments.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: Do not enter or allow people (or pets) to enter the treated area until sprays have dried.

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable containers larger than 5 gallons:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable containers 5 gallons or larger:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

GF-2654 herbicide is intended for selective control of many broadleaf weeds in certain crops (cereal grains, corn, grain sorghum, soybeans and sugarcane), orchard floors (pome fruit, including apples and pears, stone fruit, nut orchards and pistachios), fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Apply GF-2654 as a water or oil-water spray during warm weather when target weeds or woody plants are actively growing. Application under drought conditions will often give poor results. Use low spray pressure to minimize drift. Generally, the lower dosages specified on this label will be satisfactory for young, succulent growth of susceptible weed species. For less susceptible species and under conditions where control is more difficult, use higher specified rates. Deep-rooted perennial weeds such as Canada thistle and field bindweed and many woody plants usually require repeated applications for satisfactory control. Consult your State Agricultural Experiment stations or Extension Service Weed Specialists for recommendations from this label that best fit local conditions.

Use Precautions and Restrictions

Be sure that use of GF-2654 conforms to all application regulations.

Chemigation: Do not apply this product through any type of irrigation system.

Excessive amounts of 2,4-D in the soil may temporarily inhibit seed germination and plant growth.

Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition et al. v. EPA, C01-0132C, (W.D. W.A.). For further information, please refer to EPA website: <http://www.epa.gov/espp/litstatus/wtc/index.htm>.

Herbicide Resistance Management

2,4-D, the active ingredient in this product, is a Group 4 herbicide (synthetic auxin). Some naturally occurring weed biotypes that are tolerant (resistant) to 2,4-D may exist due to genetic variability in a weed population. Where resistant biotypes exist, the repeated use of herbicides with the same mode of action can lead to the selection for resistant weeds. Certain agronomic practices reduce the likelihood that resistant weed populations will develop and can be utilized to manage weed resistance once it occurs.

To aid in the prevention of developing 2,4-D resistant weeds, Dow AgroSciences recommends the following practices:

Herbicide Selection:

- Rotate the use of 2,4-D with non-auxin (non-Group 4) herbicides.
- Utilize a broad spectrum soil-applied herbicide as a foundation treatment.

- Utilize tank mixes or sequential applications of herbicides with alternative modes of action.
- Avoid using more than two applications of a Group 4 herbicide, such as 2,4-D, within a single growing season unless mixed with another mode of action herbicide with overlapping spectrum.
- Apply full rates of 2,4-D at the specified time (correct weed size) to minimize escapes of tolerant weeds.

Crop Selection and Cultural Practices:

- Incorporate additional weed control practices whenever possible, such as mechanical cultivation, delayed planting, crop rotation, and weed-free crop seeds, as part of an integrated weed control program.
- Do not allow weed escapes to produce seeds, roots or tubers.
- Thoroughly clean plant residues from equipment before leaving fields suspected to contain resistant weeds.
- Scout fields after application to detect weed escapes or shifts in weed species.
- If resistance is suspected, treat weed escapes with an alternate mode of action or cultivation.
- Report any incidence of repeated non-performance of this product against a particular weed species to the local retailer, county extension agent, or Dow AgroSciences representative.

Because the presence of herbicide resistance in weed populations is difficult to detect prior to use, Dow AgroSciences accepts no liability for any losses that may result from the failure of this product to control weeds resistant to this mode of action. Incidents of non-performance should be reported to the local retailer, county extension agent, or Dow AgroSciences representative.

Spray Drift Management

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with other active ingredients that require a coarse or coarser spray, apply only as a coarse or coarser spray (ASABE S-572 standard) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a medium or finer spray, apply only as a medium or coarser spray (ASABE Standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a medium droplet spray, leave one swath unsprayed at the downwind edge of the treated field.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include cotton, okra, flowers, fruit trees, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Equipment

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Aerial Application

The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.

Groundboom Application

Do not apply with a nozzle height greater than 4 feet above the crop canopy.

Mixing Directions**GF-2654 – Alone**

Mix GF-2654 only with water unless otherwise directed on this label. Add about half of the water to the mixing tank, then add GF-2654 with agitation, and finally the rest of the water with continuing agitation.

Note: Adding oil, wetting agent, or other surfactant to the spray mixture may increase effectiveness on weeds, but also may reduce selectivity to crops resulting in crop damage.

GF-2654 - Tank Mix

When tank mixing, read and follow the label of each tank mix product used for precautionary statements, directions for use, weeds controlled, and geographic and other restrictions. Use in accordance with the most restrictive of label limitations and precautions. Do not exceed any active ingredient's maximum use rates when tank mixing. Do not tank mix this product with any product containing a label prohibition against tank mixing with 2,4-D.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of this product and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing with Liquid Nitrogen Fertilizer: This product may be combined with liquid nitrogen fertilizer suitable for foliar application to accomplish broadleaf weed control and fertilization of corn, small grains or pastures in a single operation. Use GF-2654 in accordance with directions for these crops provided in this label. Use liquid fertilizer at rates recommended by the supplier or Extension Service Specialist. Test for mixing compatibility as described above before mixing in a spray tank. A compatibility aid such as Unite or Complex may be needed in some situations. Compatibility is best with liquid fertilizer solutions containing only nitrogen. Mixing with N-P-K solutions may not be satisfactory, even with the addition of a compatibility aid. Pre-mixing 1 part GF-2654 with up to 4 parts water may help in situations when mixing difficulty occurs.

Fill the tank about half full with the liquid fertilizer, then add the required amount of GF-2654 with agitation. Maintain agitation and complete filling the tank with liquid fertilizer. Apply immediately and

continue agitation in spray tank during application. **Do not store the spray mixture.** Application during very cold weather (near freezing) is not advisable.

Sprayer Clean-Out

To avoid injury to desirable plants, thoroughly clean equipment used to apply this product before re-use or applying other chemicals.

1. Rinse and flush application equipment thoroughly after use at least three times with water. Dispose of all rinse water by applying to treatment area or applying to non-cropland area away from water supplies.
2. During the second rinse, add 1 quart of household ammonia for every 25 gallons of water or use commercially available tank cleaner solution. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.
6. If equipment is to be used to apply another pesticide or agricultural chemical to a 2,4-D susceptible crop, additional steps may be required to remove all traces of 2,4-D, including cleaning of disassembled parts and replacement of hoses or other fittings that may contain absorbed 2,4-D.

Application Directions

Apply with calibrated air or ground equipment using sufficient spray volume to provide adequate coverage of target weeds or as otherwise directed in specific use directions. For broadcast application, use a spray volume of 3 gallons or more per acre by air and 10 gallons or more per acre for ground equipment. Where states have regulations which specify minimum spray volumes, they must be observed. In general, increase spray volume as crop canopy, height and weed density increase in order to obtain adequate spray coverage. **Do not apply less than 3 gallons total spray volume per acre.**

Application Rate

The lower dosages given will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species and under conditions where control is more difficult, the higher dosages will be needed.

Application Timing

Apply GF-2654 during warm weather when weeds are young and actively growing.

Spot Treatments

To prevent misapplication, apply spot treatments with a calibrated boom or with hand sprayers using a fixed spray volume per 1000 sq ft as indicated below.

Hand-Held Sprayers: Hand-held sprayers may be used for spot applications of GF-2654. Take care to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based upon the application rate for an area of 1000 sq ft. Mix the amount of GF-2654 (fl oz or mL) corresponding to the desired broadcast rate in 1 to 3 gallons of spray. To calculate the amount of GF-2654 required for larger areas, multiply the table value (fl oz or mL) by the thousands of sq ft to be treated. An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

Rate Conversion Table for Spot Treatment:

Label Broadcast Rate (pint/acre)							
1/2	2/3	3/4	1	2	3	4	8
Equivalent Amount of GF-2654 per 1000 sq ft							
1/5 fl oz (5.5 mL)	1/4 fl oz (7.3 mL)	1/3 fl oz (8.3 mL)	3/8 fl oz (11 mL)	3/4 fl oz (22 mL)	1 fl oz (33 mL)	1 1/2 fl oz (44 mL)	3 fl oz (88 mL)

Band Application

GF-2654 may be applied as a band treatment. Use the formulas below to determine the appropriate rate and volume per treated acre.

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Band rate per treated acre}$$

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Band volume per treated acre}$$

Weeds Controlled**Annual or Biennial Weeds**

beggarticks ¹	mousetail
bittercress, smallflowered	mustards (except blue mustard)
bitterweed	parsnip, wild
broomweed, common ¹	pennycress, field
burdock, common	pepperweed ¹
buttercup, smallflowered ¹	pigweeds (<i>Amaranthus</i> spp.) ¹
carpetweed	poorjoe
cinquefoil, common	primrose, common
cinquefoil, rough	purslane, common
cocklebur, common	pusley, Florida
cofeeweed	radish, wild
copperleaf, Virginia	ragweed, common
croton, Texas	ragweed, giant
croton, woolly	rape, wild
flixweed	rocket, yellow
galinsoga	salsify, common ¹
geranium, Carolina	salsify, western ¹
hemp, wild	shepherdspurse
horseweed (marestail)	sicklepod
jewelweed	smartweed (annual species) ¹
jimsonweed	sneezeweed, bitter
knotweed ¹	sowthistle, annual
kochia	sowthistle, spiny
lambsquarters, common	spanishneedles
lettuce, prickly ¹	sunflower
lettuce, wild	sweetclover
lupines	tansymustard
mallow, little ¹	thistle, bull
mallow, Venice ¹	thistle, musk ¹
marshelder	thistle, Russian (tumbleweed) ¹
morningglory, annual	velvetleaf
morningglory, ivy	vetches
morningglory, woolly	

Perennial Weeds

alfalfa ¹	eveningprimrose, cutleaf
artichoke, Jerusalem ¹	garlic, wild ¹
aster, many-flower ¹	goldenrod
Austrian fieldcress ¹	hawkweed, orange ¹
bindweed (hedge, field and	healal

European) ¹	ironweed, western
blue lettuce	ivy, ground ¹
blueweed, Texas	Jerusalem artichoke
broomweed	loco, bigbend
bullnettle ¹	nettles (including stinging) ¹
carrot, wild ¹	onion, wild ¹
catnip	pennywort
chicory	plantains
clover, red ¹	ragwort, tansy ¹
coffeeweed	sowthistle, perennial
cress, hoary ¹	thistle, Canada ¹
dandelion ¹	vervains ¹
docks ¹	waterplantain
dogbanes ¹	wormwood

¹May require application to small weeds, repeat applications, and/or use of higher specified rates of this product. Control at rates of 1 pint or less per acre may only be partial.

Specific Use Directions

Agricultural Use Requirements for Crops: For the following crop uses, follow PPE and re-entry instructions in the Agricultural Use Requirements section of this label.

Cereal Grains¹

¹Barley, millet, oats, rye, wheat

Application Timing	GF-2654 (pint/acre)	Use Directions
spring post-emergence barley, millet, rye, wheat,	2/3 - 1 1/3	Apply when weeds are small and actively growing. Use a lower rate in the rate range for small rapidly growing annual or biennial weeds and a higher rate in the rate range for perennial weeds or for annual or biennial weeds in advanced growth stages or when growing conditions are less than ideal. Postemergence: Apply after crop is fully tillered, (usually 4 to 8 inches tall), but not forming joints in the stems. Preharvest: Apply using air or ground equipment when crop is in dough stage of grain development to control or suppress weeds that might interfere with harvest.
oats	1/2 - 1	
preharvest (dough stage) all listed cereals	1	

Precautions:

- Up to 2.5 pints per acre may be applied postemergence to barley, millet, rye and wheat. However, there is greater risk of crop injury at rates greater than 1 1/3 pints per acre. Use such rates only when the need for weed control justifies additional risk to the crop.

Restrictions:

- Preharvest Interval:** Do not apply within 14 days of grain harvest
- Do not apply more than a total of 3.68 pints of GF-2654 (1.75 lb of acid equivalent) per acre per use season.
- Limit use to no more than one post-emergence application and one preharvest application per crop season.
- Do not apply GF-2654 at the crop seedling stage of growth prior to tillering or from early boot (forming joints in the stem) through milk stage of grain development.** Consult state agricultural

experiment station or extension service weed specialists for recommendations or suggestions to fit local conditions.

- Do not apply if crop is underseeded with legumes.

Corn (Field, Sweet, Popcorn)

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant (burndown) preemergence field, sweet, popcorn	1 - 2	Use a higher rate in the rate range for less susceptible weeds or cover crops, weeds in advanced stages of development, or under less favorable growth conditions. Preplant: Apply 7 to 14 days before planting corn to control emerged broadleaf weed seedlings or existing cover crops. Preemergence: Apply any time after planting, but before corn emerges to control broadleaf weed seedlings or existing cover crops.
postemergence field, sweet, popcorn annual broadleaf weeds crop up to 8 inches tall	1/2 - 1	Apply when weeds are small and corn is less than 8 inches tall (to top of crop canopy). If corn is more than 8 inches tall, use drop nozzles and directed sprays to keep spray off of foliage.
crop 8 inches tall to tasseling (directed spray only)	1	Treat perennial weeds when they are in bud to bloom stage. Do not apply from tasseling to hard dough stage.
perennial broadleaf weeds		
preharvest field and popcorn only	up to 3	Apply after corn is in hard dough (or denting) stage. Do not apply preharvest to sweet corn.

Precautions:

- Preplant or preemergence applications to light sandy soils is not recommended.
- Corn hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your Agricultural Experiment Station or Extension Service Weed Specialist for this information.
- **Note:** Corn treated with 2,4-D may exhibit stem brittleness for 8 to 10 days following application. During this period, the crop is more susceptible to stem breakage from cultivation or wind.

Restrictions:

Field Corn and Popcorn:

- **Preharvest Interval:** Do not apply within 7 days of grain or fodder harvest.
- Do not make more than one preplant or preemergence application, one postemergence application, and one preharvest application per use season.
- Do not apply more than a total of 6.32 pints of GF-2654 (3 lb of acid equivalent) per acre per use season.

Sweet Corn:

- **Preharvest Interval:** Do not apply within 45 days of ear harvest.
- Do not use treated crop as fodder for 7 days following application.
- Do not make a postemergence application within 21 days after a previous application.
- Do not make more than one preplant or preemergence application and one postemergence application per use season.
- Do not apply more than a total of 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre per use season.

Fallow Land¹ and Crop Stubble

¹Fallow land is idle land, postharvest to crops or between crops.

Weeds	GF-2654 (pint/acre)	Use Directions
annual broadleaf	1 - 2	Use a lower rate in the rate range when weeds are small (2 to 3 inches tall) and actively growing. Use a higher in the rate range when weeds are larger and under less favorable growth conditions.
biennial broadleaf	2 - 4	Apply when musk thistles or other biennial species are in the seedling to rosette stage and before development of flower stalks. The lower rate in the rate range can be used in the spring during the rosette stage. Use the highest rate in the rate range in the fall or after flower stalks have developed.
perennial broadleaf		Apply when perennial weeds are in bud to early bloom stage or while in good vegetative growth.
wild garlic and onion in crop stubble	4	Apply to new regrowth of wild garlic or onion that occurs in the fall after harvest of small grains, corn or grain sorghum.

Precaution:

- For best weed control results, do not cultivate for at least two weeks after application or until top growth is dead.

Restrictions:

- Preharvest Interval:** Do not apply within 7 days of forage for hay harvest.
- Minimum Treatment Interval:** Do not apply within 30 days of a previous application.
- Do not apply more than a total of 8.4 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Do not apply more than two times per year.

Planting in Treated Areas

Labeled Crops: Within 29 days after an application of this product, plant only those crops listed on this or other registered 2,4-D labels. Follow more stringent limitations, if any, provided in directions for specific crops. Labeled crops may be at risk of crop injury or loss if planted soon after application, especially during the first 14 days. Degradation factors described below should be considered in weighing this risk.

Other Crops: All other crops may be planted 30 days or more after application without concern for illegal residues in the planted crop. However, under certain conditions, there may be a risk of injury to susceptible crops. Degradation factors described below should be considered in weighing this risk. Under normal conditions, any crop may be planted without risk of injury if at least 90 days of soil temperatures above freezing have elapsed since application.

Degradation Factors: When planting into treated areas, the risk of crop injury is less if lower rates of product were applied and conditions following application have included warm, moist soil conditions that favor rapid breakdown of 2,4-D. Risk is greater if higher rates of product were applied and soil temperatures have been cold and/or soils have been excessively wet or dry in the days following application. Consult your local agricultural extension service or information about susceptible crops and typical conditions in your area.

Pome Fruit (Crop Group 11)¹, Stone Fruit (Crop Group 12)², Tree Nuts (Excluding Filberts)³ and Pistachio Orchard Floors

¹ Pome fruit (crop group 11) including apple, crabapple, loquat, mayhaw, oriental pear, pear, quince

² Stone fruit (crop group 12) including apricot, chickasaw plum, damson plum, Japanese plum, nectarine, peach, plum, plumcot, prune, sweet cherry, tart cherry

³ Tree nuts including almond, beech nut, black walnut, Brazil nut, butternut, cashew, chestnut, chinquapin, English walnut, hickory nut, macadamia nut (bush nut), pecan

Application Timing	GF-2654 (pint/acre)	Use Directions
postemergence annual and biennial weeds	1 - 2	For application to orchard floors, use coarse, low pressure sprays and sufficient water for thorough coverage of weeds.
perennial weeds	up to 4	Apply to annual weeds when small and actively growing. Apply to perennial weeds from bud to bloom stage.

Precautions:

- Avoid application immediately before irrigation and withhold irrigation for two days before and three days after application.
- Newly established trees or young orchards are more susceptible to 2,4-D injury. Apply only to orchards that have been established for at least one year and are in vigorous growth condition.

Restrictions:

• Preharvest intervals:

Pome Fruit: Do not apply within 14 days of harvest.

Stone Fruit: Do not apply within 40 days of harvest.

Tree Nuts and Pistachio: Do not apply within 60 days of harvest.

• Minimum Treatment Interval:

Pome Fruit and Stone Fruit: Do not apply within 75 days of a previous application.

Tree Nuts and Pistachio: Do not apply within 30 days of a previous application.

- Do not cut orchard floor forage for hay within 7 days after application.
- Do not make more than two applications per year.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- To avoid tree injury, do not allow spray drift to contact foliage, fruit, stems, trunks or trees or exposed roots.
- Do not apply when orchards are blooming.
- Do not make orchard floor applications in areas with light sandy soils.

Rice

(Not for Use in California)

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant	1 - 2	Apply 2 to 4 weeks before planting rice to control emerged broadleaf weeds.
postemergence	1 - 2 ¹	Apply when rice is in late tillering stage and at the time of first joint development (first to second green ring).

¹ Up to 3 pints per acre may be applied postemergence for difficult weed control situations. However, there is greater risk of crop injury at rates greater than 2 pints per acre. Such rates should be used only when the need for weed control justifies additional risk to the crop.

Precautions:

- Some rice varieties under certain conditions or stages of growth may be injured by 2,4-D. Before applying, consult local university or agricultural extension service specialists regarding for local treatment recommendations for various rice varieties.

Restrictions:

- **Preharvest Interval:** Do not apply within 60 days of harvest.
- Do not apply more than one preplant and one postemergence application per use season.
- Do not apply more than a total of 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre per use season.
- Do not apply at early seedling stage or after rice internodes exceed one-half inch or panicle initiation.

Sorghum - Grain Sorghum (Milo) and Forage

Application Timing	GF-2654 (pint/acre)	Use Directions
postemergence crop 6 - 8 inches tall	1/2 - 1	Apply when sorghum is 6 to 15 inches tall. If sorghum is more than 8 inches tall (to top of crop canopy), use drop nozzles and apply as a directed spray to keep spray off of foliage.
crop 8 - 15 inches tall (directed spray only)	3/4 - 1	

Precautions:

- Sorghum hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your agricultural experiment station or extension service weed specialist for this information.
- **Note:** Temporary crop injury can be expected under conditions of high soil moisture and high air temperatures. If it is necessary to apply GF-2654 under these conditions, use no more than 2/3 pint per acre.

Restrictions:

- **Preharvest Interval:** Do not apply within 30 days of grain harvest.
- Do not permit meat or dairy animals to consume treated crop as fodder or forage within 30 days after application.
- Do not apply more than a total of 2.1 pints of GF-2654 (1 lb of acid equivalent) per acre per use season.
- Do not apply more than one postemergence application per use season.
- **Do not apply during boot, or later stages of growth.**

Soybeans**(Preplant Burndown Only)**

Crop oil concentrates, agricultural surfactants and fluid fertilizers approved for use on growing crops may be added to spray mixtures of GF-2654 to increase the herbicidal effectiveness on certain weeds. Read and follow all directions and precautions on this label and on the label of each product added to the spray mixture. Refer to the Mixing Directions section for instructions for tank mixing and compatibility testing.

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant (burndown)	3/4 - 1	Apply not less than 15 days before planting soybeans, when weeds are small and actively growing. Use a higher rate in the rate range on larger weeds and when perennials are present. See Precautions and Restrictions below.
	1 - 2	Apply not less than 30 days before planting soybeans, when weeds are small and actively growing. Use a higher rate in the rate range on larger weeds and when perennials are present. See Precautions and Restrictions below.

Precautions:

- **Important Notice:** Unacceptable injury to soybeans planted in treated fields may occur. Whether soybean injury occurs and the extent of such injury will depend upon weather (temperature and rainfall) from herbicide application until soybean emergence and agronomic factors such as the amount of weed vegetation and previous crop residue present at the time of application. Injury is more likely under cool rainy conditions and where there is less weed vegetation and crop residue present.
- In treated fields, plant soybean seed as deep as practical, but not less than 1 inch deep. Adjust the planter, if necessary, to ensure that planted seed is adequately covered.

Restrictions:

- Do not disturb treated soil through tillage between application and planting of soybeans.
- Do not use on sandy soils with less than 1% organic matter.
- Do not make more than one application per season regardless of the application rate used.
- Do not apply GF-2654 as a preplant application in soybeans unless the results of soybean injury are acceptable, including possible stand loss and/or yield reduction.
- During the growing season following application, do not replant treated fields with crops other than those labeled for use with GF-2654.
- Do not apply more than a total of 2.1 pints of GF-2654 (1 lb of acid equivalent) per acre per use season.

Sugarcane

Application Timing	GF-2654 (plnt/acre)	Use Directions
preemergence postemergence	2 - 4	Consult your agricultural experiment station or extension service weed specialist local recommendations. Preemergence: Apply to actively growing weeds before cane emerges. Postemergence: Apply after cane emerges through canopy closure. Use a higher rate in the rate range for perennial weeds and difficult to control species.

Restrictions:

- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Do not harvest cane prior to maturity.
- Do not make more than one preemergence and one postemergence application per season.

Forestry, Rangeland, Established Grass Pastures, and Non-Cropland Areas

Agricultural Use Requirements for Forest Use (Except Tree Injection Use): For use in forests, follow PPE and re-entry instructions in the Agricultural Use Requirements section under the Directions for Use heading of this label.

Agricultural Use Requirements for Rangeland, Pasture, Forest (Tree Injection Only) and Non-Cropland Areas: When this product is applied to rangeland and established grass pastures not harvested for hay or seed; non-cropland areas, and when applied by tree injection in forest sites, follow re-entry requirements given in the Non-Agricultural Use Requirements section under the Directions for Use heading of this label.

Forestry

Forest site preparation, forest roadsides, brush control, established conifer release (including Christmas trees and reforestation areas)

Application Method	GF-2654	Use Directions
annual weeds	2 - 4 pt/acre	Apply before the bud stage when weeds are small and growing actively. Apply when biennial and perennial species are in the seedling to rosette stage and before flower stalks appear. For difficult to control perennial broadleaf weeds and woody species, use up to 1 gallon of GF-2654 and 1 to 4 quarts of Garlon® 3A herbicide per acre. For conifer release, apply before budbreak of conifers in early spring when weeds are small and actively growing.
biennial and perennial broadleaf weeds susceptible woody plants	4 - 8 pt/acre	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the specified broadcast rate and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
conifer release species such as balsam fir black spruce jack pine ponderosa pine red pine red spruce white pine white spruce	1 1/2 - 3 qt/acre	To control competing hardwood species such as alder, aspen, birch, hazel, and willow, apply from mid- to late summer when growth of conifer trees has hardened off and woody plants are still actively growing. Apply with ground equipment using sufficient spray volume to ensure complete coverage. Because this treatment may cause occasional conifer injury, do not apply if such injury cannot be tolerated.
directed spray: conifer plantations including pine	4 qt/100 gal	Apply when brush or weeds are actively growing by directing the spray so as to avoid contact with conifer foliage and injurious amounts of spray. Apply in oil, oil-water, or water carrier in a spray volume of 10 to 100 gallons per acre.
basal spray (may also be used in rangeland, pastures, and non-cropland areas)	8 qt/100 gal or	Thoroughly wet the base and root collar of all stems until the spray begins to accumulate around the root collar at the ground line. Wetting stems with the mixture may also aid in control.
cut stump surfaces (may also be used in rangeland, pastures, and non-cropland areas)	2.5 fl oz/gal of water	Apply as soon as possible after cutting trees. Thoroughly soak the entire stump with the 2,4-D mixture including cut surface, bark and exposed roots.
frill and girdle (may also be used in rangeland, pastures, and non-cropland areas)		Cut frills (overlapping V-shaped notches cut downward through the bark in a continuous ring around the base of the tree) using an axe or other suitable tool. Treat freshly cut frills with as much of the 2,4-D mixture as they will hold.
tree injection (may also be used in rangeland, pastures, and non-cropland areas)	1 - 2 mL per injection site	To control unwanted hardwood trees such as elm, hickory, oak, and sweetgum in forests and other non-crop areas, apply by injecting at a rate of 1 mL of undiluted GF-2654 per inch of trunk diameter at breast height (DBH) as measured approximately 4 1/2 ft above the ground. However, inject as close to the root

Application Method	GF-2654	Use Directions
		<p>collar as possible and the injection bit must penetrate the inner bark. Make applications throughout the year, but for best results, apply between May 15 and October 15. Do not treat maples during the spring sap flow.</p> <p>For hard to control species such as ash, maple, and dogwood, use 2 mL of undiluted GF-2654 per injection site or double the number of 1 mL injections.</p> <p>Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.</p>

Restrictions:

- Do not allow sprays to contact conifer shoot growth (current year's new growth) or injury may occur.
- Do not apply to nursery seed beds.
- For conifer release, do not use on plantations where pine or larch are among the desired species.
- For broadcast applications, do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per 12-month period.
- Limited to one broadcast application per year
- For basal spray, cut surface stumps, and frill applications, do not apply more than 16.84 pints of GF-2654 (8 lb of acid equivalent) per 100 gallons of spray solution.

Rangeland and Established Grass Pastures (Including Perennial Grasslands not in Agricultural Production Such as Conservation Reserve Program Acres)

Weeds or Woody Plants	GF-2654 (pint/acre)	Use Directions
annual broadleaf weeds	2	For best results, apply before the bud stage when weeds are small and growing actively. Apply before flower stalks appear, when musk thistles or other biennial species are in the seedling to rosette stage. Refer to the Weeds Controlled section for a listing of susceptible weed species and weeds that may be only partially controlled and require repeat applications and/or use of higher specified rates, even under ideal conditions of application.
biennial and perennial broadleaf weeds	2 - 4	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate specified for this treatment site and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
tree injection application		See instructions for tree injection application in Forestry section.
wild garlic and wild onion	4	Make three applications (fall-spring-fall or spring-fall-spring) starting in late fall or early spring.
broadleaf weed control in newly sprigged coastal bermudagrass	2 - 4	Apply either preemergence or postemergence. Follow use directions for annual, biennial and perennial broadleaf weed control above.

Weeds or Woody Plants	GF-2654 (pint/acre)	Use Directions
sand shinnery oak sand sagebrush	2	Sand shinnery oak: Apply by aircraft between May 15 and June 15. Sand sagebrush: Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre.
big sagebrush rabbitbrush	4	Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre. Re-treatment may be needed.
buckbrush chamise chaparral species coastal sage coyotebrush manzanita		Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use water or 1:4 oil-water emulsion as carrier and a spray volume of 5 to 10 gallons per acre. Re-treatment may be needed.
southern wild rose broadcast application	up to 4	Broadcast: Apply in a spray volume of 5 gallons or more per acre by aircraft or 10 gallons or more per acre by ground equipment. Spot treatment: Apply when foliage is well developed. Thorough coverage is required. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. Two or more treatments may be required.
spot treatment	1.28 fl oz/gal of spray solution	Do not exceed 4 pints per acre per application.

Precautions:

- If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of forage harvest. For program lands, such as CRP, consult program rules to determine whether grass or hay may be used. The more restrictive requirements of the program rules or this label must be followed.
- **Minimum Treatment Interval:** Do not apply within 30 days of a previous application.
- Do not use on bentgrass, alfalfa, clover, or other legumes.
- Do not use on newly seeded areas until grass is well established.
- Do not use from early boot to milk stage where grass seed production is desired.
- For grazed areas, the maximum use rate is 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Do not make more than two applications per season.
- For susceptible annual and biennial broadleaf weeds: Do not apply more than 2 pints of GF-2654 (1 lb of acid equivalent) per acre per application.
- For moderately susceptible biennial, perennial broadleaf weeds and difficult to control weeds and woody plants: Do not apply more than 4 pints of GF-2654 (2 lb of acid equivalent) per acre per application.

- Spot treatment: Do not apply more than 4 pints of GF-2654 (2 lb of acid equivalent) per acre.

Non-Cropland Areas

Such as fencerows, hedgerows, roadsides, drainage ditches, rights-of way, utility power lines, railroads, airports, and other non-cropland areas

Application Method	GF-2654 (pint/acre)	Use Directions
annual broadleaf weeds	2 - 4	Apply before the bud stage when annual weeds are small and growing actively. Biennial and perennial weeds should be rosette to bud stage, but not flowering at the time of application. For difficult to control perennial broadleaf weeds and woody species, tank mix up to 1 gallon of GF-2654 plus 1 to 4 quarts of Garlon 3A per acre. For ground application: (High volume) apply a total of 100 to 400 gallons per acre; (low volume) apply a total of 10 to 100 gallons per acre. For helicopter: Apply a total of 5 to 30 gallons per acre spray volume.
biennial and perennial broadleaf weeds	4	
susceptible woody plants on rights-of-way	4 - 8	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate specified for this treatment site and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
tree injection application		See instructions for tree injection application in Forestry section.
southern wild rose broadcast application	up to 4	Broadcast: Apply in a spray volume of 10 gallons or more per acre by ground equipment. Apply when foliage is well developed. Thorough coverage is required. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. Two or more treatments may be required.
spot treatment	1.28 fl oz/gal of spray solution	

Precautions:

- Bentgrass, St. Augustine, clover, legumes and dichondra may be severely injured or killed by this treatment.

Restrictions:

- Do not apply to newly seeded areas until grass is well established.
- **Annual and perennial weeds:**
Minimum Treatment Interval: Do not reapply to a treated area within 30 days of a previous application.
Do not apply more than 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application.
Do not make more than two applications per season.
- **Woody plants:**
Do not apply more than 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
Do not make more than one application per season.

Turfgrass

Turfgrass Grown for Seed or Sod Farms

Agricultural Use Requirements: When used in grass grown for seed or sod farms, follow PPE and re-entry instructions in the Agricultural Use Requirements section of this label.

Application Timing	GF-2654 (pint/acre)	Use Directions
turfgrass grown for seed (postemergence) seedling grass (five-leaf stage or later)	3/4 - 1	Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Do not apply to newly seeded grasses until well established (five-leaf stage or later) and then use a maximum of 1 pint per acre. Cool season turfgrass is tolerant of higher rates.
well-established grasses	1 - 4	Do not apply to turfgrass in the early boot through milk stage if seed production is desired. When turfgrass is well established, higher rates of up to 4 pints per acre may be applied for control of hard to kill annual or perennial weeds.
sod farms (postemergence)	2 - 4	Deep-rooted perennials such as bindweed and Canada thistle may require repeat applications. Avoid mowing sod farms for 1 to 2 days before or after application. Delay irrigation until the day following application.

Precautions:

- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and, with fall application, reseed in the spring.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of cutting forage for hay.
- **Minimum Treatment Interval:** Do not reapply to a treated area within 21 days of a previous application.
- Do not use on creeping grasses such as bent except as a spot treatment.
- Do not use on injury-sensitive southern turfgrass such as St. Augustinegrass.
- Do not use on dichondra or other herbaceous groundcovers. Legumes may be damaged or killed.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Maximum of 2 lb acid equivalent (4.2 pints of GF-2654) per acre per application.
- Do not make more than two applications of GF-2654 per use season.

Ornamental Turfgrass (Excluding Turfgrass Grown for Seed or Sod Farms)

(Includes lawns, golf courses, cemeteries and parks, airfields, roadsides, vacant lots, drainage ditch banks)

Use Requirements for Ornamental Turfgrass Areas: When this product is applied to ornamental turfgrass areas, follow PPE and reentry instructions in the Non-Agricultural Use Requirements section of this label.

Application Timing	GF-2654 (pint/acre)	Use Directions
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Application Timing	GF-2654 (pint/acre)	Use Directions
ornamental turfgrass (postemergence) seedling grass (five-leaf stage or later)	3/4 - 1	Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Deep-rooted perennial weeds such as bindweed and Canada thistle may require repeat applications. Do not apply to newly seeded turfgrass until well established (five-leaf stage or later) and then use a maximum of 1 pint per acre. Cool season turfgrass is tolerant of higher rates.
well-established turfgrass	2 - 3	
biennial and perennial broadleaf weeds	3	

Precautions:

- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and, with fall application, reseed in the spring.

Restrictions:

- **Minimum Treatment Interval:** Do not reapply within 21 days of a previous application.
- Do not use on creeping grasses such as bent except as a spot treatment.
- Do not use on injury-sensitive southern turfgrass such as St. Augustinegrass.
- Do not use on dichondra or other herbaceous groundcovers. Legumes may be damaged or killed.
- Do not make more than two broadcast applications per year per treatment site (does not include spot treatments).
- Do not apply more than a total of 6.32 pints of GF-2654 per acre (3 lb of acid equivalent) per year.

Aquatic Uses

Use Requirements for Aquatic Areas: When this product is applied to aquatic areas, follow PPE and re-entry instructions in the Non-Agricultural Use Requirements section of this label.

Banks of Irrigation Canals and Ditches

Weeds	GF-2654 (pint/acre)	Use Directions
annual	2 - 4	Apply using low pressure spray (10 to 40 psi) in a spray volume of 20 to 100 gallons per acre using power operated spray equipment. Apply when wind speed is low, 5 mph or less. Apply working upstream to avoid accidental concentration of spray into water. Do not spray cross-stream to opposite banks and avoid boom spraying over water surface. When spraying shoreline weeds, allow no more than a 2-foot overspray onto water surface with an average of less than 1 foot of overspray to prevent significant water contamination.
biennial and perennial broadleaf susceptible wood plants	4	Apply before the bud stage when weeds are small and growing actively. Apply before flower stalks appear when biennial and perennial species are in the seedling to rosette stage. For hard to control weeds, a repeat application after 30 days at the same rate may be needed. For woody species and patches of perennial weeds, mix 1 gallon of GF-2654 per 64 to 150 gallons of total spray. Wet foliage by applying about 3 to 4 gallons of spray per 1000 sq ft (10.5 X 10.5 steps).

Restrictions:

- Do not make more than two treatments per season or reapply within 30 days.
- Use 2 gallons or more of spray solution per acre.
- Do not apply more than 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application or more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.

Do not use on small canals with a flow rate less than 10 cubic feet per second (CFS) where water will be used for drinking purposes. CFS may be estimated by using the formula below. Determine the approximate velocity needed for the calculation by observing the length of time that it takes a floating object to travel a defined distance. Divide the distance (ft) by the time (sec) to estimate velocity (ft per sec). Repeat three times and use the average to calculate CFS.

Average Width (ft) x Average Depth (ft) x Average Velocity (ft per sec) = CFS

Ditchbank Weeds: Do not spray cross-stream to opposite bank. Do not allow boom spray to be directed onto water.

Shoreline Weeds: Boom spraying onto water surface must be held to a minimum and allow no more than a 2-foot overspray onto water with an average of less than 1 foot overspray to prevent introduction of greater than negligible amounts of chemical into the water.

Ponds, Lakes, Reservoirs, Marshes, Bayous, Drainage Ditches, Canals, Rivers and Streams That are Quiescent or Slow Moving, Including Programs of the Tennessee Valley Authority

Notice to Applicators: Before application, coordination and approval of local and state authorities may be required, either by letter or agreement or issuance of special permits for aquatic applications.

Emergent and Floating Aquatic Weeds Including Water Hyacinth (*Eichornia crassipes*):

Application Rate: 2 to 4 quarts per acre.

Application Timing: Spray weed mass only. Apply when water hyacinth plants are actively growing. Reapply as necessary to kill regrowth and plants missed in previous operation. Use the 4 quart per acre rate when plants are mature or when weed mass is dense.

Surface Application: Use power operated sprayers with boom or spray gun mounted on boat, tractor or truck. Thorough wetting of foliage is essential for maximum control. Use 100 to 400 gallons of spray mixture per acre. Take special precautions such as use of low pressure, large nozzles and spray thickening agents to avoid spray drift to susceptible crops. Follow label directions for use of any drift control agent.

Aerial Application: Use drift control spray equipment or thickening agent mixed in the spray mixture. Apply 1 gallon of GF-2654 per acre with standard boom systems using a minimum spray volume of 5 gallons per acre. For Microfoil drift control spray systems, apply GF-2654 in a total spray volume of 12 to 15 gallons per acre.

Restrictions for Surface Applications to Emergent Aquatic Weeds:

- **Minimum Treatment Interval:** Minimum of 21 days between applications.
- Do not apply more than 8.42 pints of GF-2654 per acre (4 lb of acid equivalent) per surface acre.
- Spot treatments are permitted.
- Limited to two applications per season.

Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2- to 3-week period following treatment. Waters having limited and less dense weed infestations may not require partial

treatments. Other local factors such as water exchange and sediment load can also influence the dissolved oxygen level. Coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for aquatic applications.

Water Use:

1. Water for Irrigation or sprays:

- A. If treated water is intended to be used only for crops or non-cropland areas that are labeled for direct treatment with 2,4-D such as pastures, turfgrass or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at anytime after the 2,4-D aquatic application.
- B. Due to potential phytotoxicity considerations, the following restrictions are applicable: If treated water is intended to be used to irrigate or mix sprays for plants grown in commercial nurseries and greenhouses, and other plants or crops that are not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:
 - i. A setback distance from functional water intake(s) of ≥ 600 ft was used for the application, or,
 - ii. A waiting period of 7 days from the time of application has elapsed, or,
 - iii. An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. Wait at least 3 days after application before initial sampling at water intake.

2. Drinking water (potable water):

- A. Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits. The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb. Applicators should consider the unique characteristics of the treated waters to assure that 2,4-D concentrations in potable water do not exceed 70 ppb at the time of consumption.
- B. For floating and emergent weed applications, the drinking water setback distance from functioning potable water intakes is ≥ 600 ft.
- C. If no setback distance of ≥ 600 ft is used for the application, applicators or the authorizing organization must provide a drinking water notification prior to a 2,4-D application to the party responsible for a public water supply or to individual private water users. Notification to the party responsible for a public water supply or to individual private water users must be done in a manner to assure that the party is aware of a water use restriction when this product is applied to potable water.

The following is an example of notification via posting, but other methods of notification that convey the above restrictions may be used and may be required in some cases under state or local law or as a condition of a permit.

Example: Locate posting notification every 250 feet including the shoreline of the treated area and up to 250 feet of shoreline past the application site to include immediate public access points. Posting must include the day and time of application. Posting may be removed if analysis of a sample collected at the intake 3 days or more following application shows that the concentration in the water is less than 70 ppb (100 ppb for irrigation or sprays), or after 7 days following application, whichever occurs first.

Text of Notification: Wait 7 days before diverting functioning surface water intakes from the treated aquatic site to use as drinking water, irrigation, or sprays, unless water at functioning drinking water intakes is tested at least 3 days after application and is demonstrated by assay to contain not more than 70 ppb 2,4-D (100 ppb for irrigation or sprays).

Application Date: _____ Time: _____

- D. Following each application of this product, do not use treated water for drinking water unless one of the following restrictions has been observed:
 - i. A setback distance from functional water intake(s) of ≥ 600 ft was used for the application, or,
 - ii. A waiting period of at least 7 days from the time of application has elapsed, or,

- iii. An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less at the water intake. Sampling for drinking water analysis should occur no sooner than 3 days after a 2,4-D application. Analysis of samples must be completed by a laboratory that is certified under the Safe Drinking Water Act to perform drinking water analysis using a currently approved version of analytical Method Number 515, 555, other methods for 2,4-D as may be listed in Title 40 CFR Part 141.24, or Method Number 4015 (Immunoassay of 2,4-D) from U.S. EPA Test Methods for Evaluating Solid Waste SW-846.
- E. **Note:** Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.
- F. Drinking water setback distances do not apply to terrestrial applications of 2,4-D adjacent to water bodies with potable water intakes.

Submerged Aquatic Weeds Including Eurasian Water Milfoil (*Myriophyllum spicatum*):

Sites	Maximum Application Rate ¹	Use Directions
aquatic weed control in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, rivers and streams that are quiescent or slow moving, including programs of the Tennessee Valley Authority	2.84 gallons (10.8 lb of acid equivalent) per acre foot	<p>Application Timing: For best results, apply in spring or early summer when aquatic weeds appear. Check for weed growth in areas heavily infested the previous year. A second application may be needed when weeds show signs of recovery, but no later than mid-August in most areas.</p> <p>Subsurface Application: Apply undiluted GF-2654 directly to the water through a boat mounted distribution system. Treat shoreline areas by subsurface injection application by boat to avoid aerial drift.</p> <p>Surface Application: Use power operated boat mounted boom sprayer. If rate is less than 5 gallons per acre, dilute to a minimum spray volume of 5 gallons per surface acre.</p> <p>Aerial Application: Use drift control spray equipment or thickening agents mixed with sprays to reduce drift. Apply through standard boom systems in a minimum spray volume of 5 gallons per surface acre. For Microfoil drift control spray systems, apply GF-2654 in a total spray volume of 12 to 15 gallons per acre. Apply to attain a concentration of 2 to 4 ppm (see table below).</p>

¹GF-2654 contains 3.8 lb of acid equivalent per gallon of product.

Table 1: Amount to Apply for a Target Subsurface Concentration					
Surface Area (acre)	Average Depth (ft)	For typical conditions – 2 ppm (2,4-D a.e./acre)	For typical conditions – 2 ppm (GF-2654 gal/acre)	For difficult conditions – 4 ppm ¹ (2,4-D a.e./acre)	For difficult conditions – 4 ppm ¹ (GF-2654 gal/acre)
1	1	5.4	1.42	10.8	2.84
	2	10.8	2.84	21.6	5.68
	3	16.2	4.26	32.4	8.53
	4	21.6	5.68	43.2	11.37
	5	27.0	7.10	54.0	14.21

¹Examples include spot treatments of pioneer colonies of eurasian water milfoil and certain difficult to control aquatic species.

Restrictions for Aquatic Sites With Submerged Aquatic Weeds:

- **Minimum Treatment Interval:** Do not apply within 21 days of previous application.
- Limited to two applications per season.
- Do not exceed 10.8 lb acid equivalent per acre foot.

Fish breathe oxygen in the water and a water-oxygen ratio must be maintained. Decaying weeds use up oxygen, but during the period when applications should be made, the weed mass is fairly sparse and the weed decomposition rate is slow enough that the water-oxygen ratio is not disturbed by treating the entire area at one time. If treatments must be applied later in the season when the weed mass is dense and repeat treatments are needed, apply product in lanes, leaving buffer strips which can then be treated when vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2- to 3-week period following treatment.

When treating moving bodies of water, apply while traveling upstream to prevent concentration of 2,4-D downstream from the application.

Coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for such use.

Water Use:

1. Water for irrigation or sprays:

- A. If treated water is intended to be used only for crops or non-cropland areas that are labeled for direct treatment with 2,4-D such as pastures, turfgrass or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at anytime after the 2,4-D aquatic application.
- B. Due to potential phytotoxicity and/or residue considerations, the following restrictions are applicable. If treated water is intended to be used to irrigate or mix sprays for unlabeled crops, non-cropland areas, or other plants not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:
 - i. A setback distance described in the Drinking Water Setback Table was used for the application, or,
 - ii. A waiting period of 21 days from the time of application has elapsed, or,
 - iii. An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. See Table 3 for the waiting period after application but before taking the initial sampling at water intake.

2. Drinking water (potable water):

- A. Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits. The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb. Applicators should consider the unique characteristics of the treated waters to assure that 2,4-D concentrations in potable water do not exceed 70 ppb at the time of consumption.
- B. For submerged weed applications, the drinking water setback distances from functioning potable water intakes are provided in Table 2 Drinking Water Setback Distance (below).
- C. If no setback distance from the Drinking Water Setback Table (Table 2) is used for the application, applicators or the authorizing organization must provide a drinking water notification and an advisory to shut off all potable water intakes prior to a 2,4-D application. Notification to the party responsible for a public water supply or to individual private water users must be done in a manner to assure that the party is aware of the water use restrictions when this product is applied to potable water.

The following is an example of notification via posting, but other methods of notification that convey the above restrictions may be used and may be required in some cases under state or local law or as a condition of a permit.

Example: Posting notification should be located every 250 feet including the shoreline of the treated area and up to 250 feet of shoreline past the application site to include immediate public access points. Posting must include the day and time of application. Posting may be removed if analysis of a sample collected at the intake no sooner than stated in Table 3 (below) shows that the concentration in the water is less than 70 ppb (100 ppb for irrigation or sprays), or after 21 days following application, whichever occurs first.

Text of Notification: Wait 21 days before diverting functioning surface water intakes from the treated aquatic site to use as drinking water, irrigation, or sprays, unless water at functioning drinking water intakes is tested no sooner than (insert days from Table 3) and is demonstrated by assay to contain not more than 70 ppb 2,4-D (100 ppb for irrigation or sprays).

Application Date: _____ Time: _____

- D. Following each application of this product, do not use treated water for drinking water unless one of the following restrictions has been observed:
- A setback distance described in the Drinking Water Setback Distance Table was used for the application, or,
 - A waiting period of at least 21 days from the time of application has elapsed, or,
 - An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less at the water intake. Sampling for drinking water analysis should occur no sooner than stated in Table 3. Analysis of samples must be completed by a laboratory that is certified under the Safe Drinking Water Act to perform drinking water analysis using a currently approved version of analytical Method Number 515, 555, other methods for 2,4-D as may be listed in Title 40 CFR, Part 141.24, or Method Number 4015 (immunoassay of 2,4-D) from U.S. EPA Test Methods for Evaluating Solid Waste SW-846.
- E. **Note:** Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.
- F. Drinking water setback distances do not apply to terrestrial applications of 2,4-D adjacent to water bodies with potable water intakes.

Table 2: Drinking Water Setback Distance for Submerged Weed Applications

Application Rate and Minimum Setback Distance From Functioning Potable Water Intake (ft)			
1 ppm ¹	2 ppm ¹	3 ppm ¹	4 ppm ¹
600	1200	1800	2400

¹ppm acid equivalent target water concentration

Table 3: Sampling for Drinking Water Analysis After 2,4-D Application for Submerged Weed Applications

Minimum Days After Application Before Initial Water Sampling at the Functioning Potable Water Intake			
1 ppm ¹	2 ppm ¹	3 ppm ¹	4 ppm ¹
5	10	10	14

¹ppm acid equivalent target water concentration

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT PERMITTED BY LAW, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitation of Remedies in any manner.

®™ Trademark of Dow AgroSciences LLC
EPA accepted __/__/__

Material to be added to an e-Jacket/Jacket

Reg. No. 62719-634

Description: NEW PRODUCT REGISTRATION
DECISION # 440743

1. ☐ Placement within the e-Jacket/jacket:
- ☐ Default: (chronological, top = newest)
 - ☐ File Location: (PDF page number, i.e., "before page 45")
-
-

2. ☐ Send to Data Extraction contractors this material:

- ☒ Newly stamped accepted label
☐ Notification
☐ New CSF
☐ Other: _____

3. Attach this coversheet to the top of the material or jacket. It must be well organized and clipped together, NOT STAPLED. Then give the material with this coversheet to staff in the Information Services Center (Room S-4900).

Reviewer's Name: MICHAEL WALSH

Phone: 308-2972 Division: RD/HB

Date: 4/14/11



**ENVIRONMENTAL PROTECTION
AGENCY**

**Office of Pesticide Programs
Registration Division (7505P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460**

EPA Reg. Number:

Date of Issuance:

62719-634

APR 14 2011

NOTICE OF PESTICIDE:

☒ Registration
☐ Reregistration
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

GF-2654 Herbicide

Name and Address of Registrant (include ZIP Code):

Dow AgroSciences, LLC
9330 Zionsville Road
Indianapolis, IN 46268-1054

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

- 1) Submit and/or cite all data required for registration/reregistration review of your product when the Agency requires all registrants of similar products to submit data. If required, failure to submit acceptable data to fulfill these requirements may result in registration cancellation in accordance with FIFRA section 6(e).
- 2) The text "EPA Reg. No. 62719-634" must be added to the labeling. Assure that the EPA Establishment Number and Net Contents are also on the label.
- 3) For the purposes of clarity, the phrase "...non-cropland and aquatic areas" in the product description under the product name at the top of page 1 must be changed to read ".....non-cropland and aquatic areas as listed."
- 4) You must generate one-year storage stability (830.6317) and corrosion characteristics (830.6320) data on the product. The observations should be made at 0, 3, 6, 9, and 12 month intervals. The results must be submitted to the Agency in electronic and hard copy format within 15 months of the date on this notice.

SEE NEXT PAGE FOR ADDITIONAL COMMENTS

Signature of Approving Official:

Kathryn V. Montague
Product Manager 23
Herbicide Branch
Registration Division (7505P)

Date:

APR 14 2011

5) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restriction established by the 2,4-D RED must be added to the **Cereal Grains (barley, millet, oats, rye, and wheat)** section on page 14:

Postemergence: Maximum of 1.25 lbs ac/acre per application.

Preharvest: Do not exceed 0.5 lbs ac/acre per application.

Note to Registrant: Per the RED, 1.25 lbs and 0.5 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

6) In the Specific Use Directions for **Corn (field, sweet, and popcorn)** on page 15, the following changes must be made.

- a) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restrictions established by the 2,4-D RED must be added to the **field corn and popcorn** restrictions:

“Preplant or preemergence: Maximum of 1.0 lb ae/acre per application.

Postemergence: Maximum of 0.5 lb ae/acre per application.

Preharvest: Maximum of 1.5 lbs ac/acre per application.”

- b) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restrictions established by the 2,4-D RED must be added to the **Sweet Corn** restrictions:

“Preplant or preemergence: Maximum of 1.0 lb ac/acre per application.

Postemergence: Maximum of 0.5 lb ae/acre per application.”

Note to Registrant: Per the RED, the 0.5 lbs, 1.0 lb, and 1.5 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

7) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restriction established by the 2,4-D RED must be added to the **Fallow Land and Crop Stubble** restrictions on page 16:

“Maximum of 2.0 lbs ac/acre per application.”

Note to Registrant: Per the RED, the 2.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

SEE NEXT PAGE

8) Before the last six bullets in the **Pome Fruit, Stone Fruit, Tree Nuts (excluding Filberts), and Pistachio Orchard Floors** section on page 16-17, you must add a header that reads "For All Uses". Per the 2,4-D RED, you must also add the text "Maximum of 2.0 lbs ac/acre per application." The text must appear as follows:

"For All Uses

- Do not cut orchard floor forage for hay within 7 days of application.
- Maximum of 2.0 lbs ae/acre per application.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- To avoid tree injury....."

Note to Registrant: Per the RED, the 2.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

9) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restriction established by the 2,4-D RED must be added to the **Rice** restrictions at the top of page 18:

- "Maximum of 1.0 lbs ac/acre per preplant application.
- Maximum of 1.5 lbs ac/acre per postemergence application.

Note to Registrant: Per the RED, the 1.0 lbs and 1.5 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

10) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The following text citing use rate restriction established by the 2,4-D RED must be added to the **Sugarcane** restrictions on page 19:

- "Maximum of 2.0 lbs ac/acre per application."

Note to Registrant: Per the RED, the 2.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

11) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The text below must be added to the **Forestry restrictions on page 21:**

- "Limit of one basal spray or cut surface application per year."

- "Limit to one injection application per year.

Maximum of 2 ml of 4.0 lbs ae formulation per injection site."

Note to Registrant: Per the RED, the 4.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

12) Per the 2,4-D Reregistration Eligibility Document (RED), the following statement must be included on the label. The text below must be added to the **Non-Cropland** restrictions on page 23.

“Applications to non-cropland areas are not applicable to treatment of commercial timber or other plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.”

13) Use rate restrictions required by the 2,4-D Reregistration Eligibility Document (RED), must be included on the label. The text below must be added to the **Ornamental Turf** restrictions on page 25.

“Maximum of 1.5 lbs ac/acre per application.”

Note to Registrant: Per the RED, the 4.0 lbs maximum allowable use rates above must also be expressed as pints of formulated product per acre, not just as pounds acid equivalent per acre.

14) In the Warranty Disclaimer on page 30-31, replace the phrases “TO THE EXTENT PERMITTED BY LAW” and “To the extent permitted by law” with “TO THE EXTENT CONSISTENT WITH APPLICABLE LAW” or “To the extent consistent with applicable law”.

15) NOTE: While no additional data is being requested at this time, marketing claims made on the pesticide label must be substantiated by data maintained in your files. If data supporting marketing claims made on the product label is not available then those claims must be removed.

16) NOTE: Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

17) Submit one (1) copy of the revised final printed label before the product is released for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

(Base label):

GF-2654**Herbicide**

For selective control of many broadleaf weeds in certain crops, orchard floors, fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Group	4	HERBICIDE
--------------	----------	------------------

Active Ingredient:

2,4-Dichlorophenoxyacetic acid, choline salt	56.3%
Other Ingredients	43.7%
Total	100.0%

2,4-dichlorophenoxyacetic acid - 38.4% - 3.8 lb/gal

Keep Out of Reach of Children**DANGER PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

ACCEPTED
with COMMENTS
In EPA Letter Dated:

APR 14 2011

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

62719-634**Precautionary Statements****Hazards to Humans and Domestic Animals**

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed, Inhaled Or Absorbed Through The Skin

Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for category A on an EPA chemical resistance category selections chart.

All pilots must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

All mixers, loaders, flaggers, other applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves
- Protective eyewear
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

E-SUBMISSION

K1A / GF-2654 / Prop Sec 3 / 09-29-10
file: GF-2654-XXX 29Sep10d.doc

GF-2654

EPA Reg. No. 62719-XXX

Registration Notes:

Proposed Section 3 label.

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)].

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

This product is toxic to fish and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Aquatic Weed Control: Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the

infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2 to 3 week period following treatment. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Waters having limited and less dense weed infestations may not require partial treatments.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

(Storage and Disposal for rigid containers 5 gal or less)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for refillable rigid containers larger than 5 gal)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for nonrefillable rigid containers larger than 5 gal)

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-XXX

EPA Est. _____

®Trademark of Dow AgroSciences LLC

Produced for

Dow AgroSciences LLC

9330 Zionsville Road

Indianapolis, IN 46268

Net Contents _____

(cover):

GF-2654**Herbicide**

For selective control of many broadleaf weeds in certain crops, orchard floors, fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Active Ingredient:

2,4-Dichlorophenoxyacetic acid, choline salt	56.3%
Other Ingredients	43.7%
Total	100.0%

2,4-dichlorophenoxyacetic acid - 38.4% - 3.8 lb/gal

Keep Out of Reach of Children**DANGER PELIGRO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to inside of label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

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EPA Est. _____

®Trademark of Dow AgroSciences LLC

Produced for**Dow AgroSciences LLC****9330 Zionsville Road****Indianapolis, IN 46268****Net Contents** _____

(Page 1 through end):

Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed, Inhaled Or Absorbed Through The Skin

Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for category A on an EPA chemical resistance category selections chart.

All pilots must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

All mixers, loaders, flaggers, other applicators and handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves
- Protective eyewear
- Chemical resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)].

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

This product is toxic to fish and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Aquatic Weed Control: Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2 to 3 week period following treatment. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Waters having limited and less dense weed infestations may not require partial treatments.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: Do not enter or allow people (or pets) to enter the treated area until sprays have dried.

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage: Keep container tightly closed when not in use. If exposed to subfreezing temperatures, the product should be warmed to at least 40°F and mixed thoroughly before using.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable containers larger than 5 gallons:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable containers 5 gallons or larger:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

GF-2654 herbicide is intended for selective control of many broadleaf weeds in certain crops (cereal grains, corn, grain sorghum, soybeans and sugarcane), orchard floors (pome fruit, including apples and pears, stone fruit, nut orchards and pistachios), fallow cropland, forests, grass pastures, rangeland, Conservation Reserve Program acres, ornamental turfgrass (including turfgrass grown for sod or seed), non-cropland and aquatic areas. Also for control of trees by injection.

Apply GF-2654 as a water or oil-water spray during warm weather when target weeds or woody plants are actively growing. Application under drought conditions will often give poor results. Use low spray pressure to minimize drift. Generally, the lower dosages specified on this label will be satisfactory for young, succulent growth of susceptible weed species. For less susceptible species and under conditions where control is more difficult, use higher specified rates. Deep-rooted perennial weeds such as Canada thistle and field bindweed and many woody plants usually require repeated applications for satisfactory control. Consult your State Agricultural Experiment stations or Extension Service Weed Specialists for recommendations from this label that best fit local conditions.

Use Precautions and Restrictions

Be sure that use of GF-2654 conforms to all application regulations.

Chemigation: Do not apply this product through any type of irrigation system.

Excessive amounts of 2,4-D in the soil may temporarily inhibit seed germination and plant growth.

Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in *Washington Toxics Coalition et al. v. EPA*, C01-0132C, (W.D. W.A.). For further information, please refer to EPA website: <http://www.epa.gov/espp/litstatus/wtc/index.htm>.

Herbicide Resistance Management

2,4-D, the active ingredient in this product, is a Group 4 herbicide (synthetic auxin). Some naturally occurring weed biotypes that are tolerant (resistant) to 2,4-D may exist due to genetic variability in a weed population. Where resistant biotypes exist, the repeated use of herbicides with the same mode of action can lead to the selection for resistant weeds. Certain agronomic practices reduce the likelihood that resistant weed populations will develop and can be utilized to manage weed resistance once it occurs.

To aid in the prevention of developing 2,4-D resistant weeds, Dow AgroSciences recommends the following practices:

Herbicide Selection:

- Rotate the use of 2,4-D with non-auxin (non-Group 4) herbicides.
- Utilize a broad spectrum soil-applied herbicide as a foundation treatment.

- Utilize tank mixes or sequential applications of herbicides with alternative modes of action.
- Avoid using more than two applications of a Group 4 herbicide, such as 2,4-D, within a single growing season unless mixed with another mode of action herbicide with overlapping spectrum.
- Apply full rates of 2,4-D at the specified time (correct weed size) to minimize escapes of tolerant weeds.

Crop Selection and Cultural Practices:

- Incorporate additional weed control practices whenever possible, such as mechanical cultivation, delayed planting, crop rotation, and weed-free crop seeds, as part of an integrated weed control program.
- Do not allow weed escapes to produce seeds, roots or tubers.
- Thoroughly clean plant residues from equipment before leaving fields suspected to contain resistant weeds.
- Scout fields after application to detect weed escapes or shifts in weed species.
- If resistance is suspected, treat weed escapes with an alternate mode of action or cultivation.
- Report any incidence of repeated non-performance of this product against a particular weed species to the local retailer, county extension agent, or Dow AgroSciences representative.

Because the presence of herbicide resistance in weed populations is difficult to detect prior to use, Dow AgroSciences accepts no liability for any losses that may result from the failure of this product to control weeds resistant to this mode of action. Incidents of non-performance should be reported to the local retailer, county extension agent, or Dow AgroSciences representative.

Spray Drift Management

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with other active ingredients that require a coarse or coarser spray, apply only as a coarse or coarser spray (ASABE S-572 standard) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a medium or finer spray, apply only as a medium or coarser spray (ASABE Standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a medium droplet spray, leave one swath unsprayed at the downwind edge of the treated field.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include cotton, okra, flowers, fruit trees, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Equipment

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Aerial Application

The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.

Groundboom Application

Do not apply with a nozzle height greater than 4 feet above the crop canopy.

Mixing Directions**GF-2654 – Alone**

Mix GF-2654 only with water unless otherwise directed on this label. Add about half of the water to the mixing tank, then add GF-2654 with agitation, and finally the rest of the water with continuing agitation.

Note: Adding oil, wetting agent, or other surfactant to the spray mixture may increase effectiveness on weeds, but also may reduce selectivity to crops resulting in crop damage.

GF-2654 - Tank Mix

When tank mixing, read and follow the label of each tank mix product used for precautionary statements, directions for use, weeds controlled, and geographic and other restrictions. Use in accordance with the most restrictive of label limitations and precautions. Do not exceed any active ingredient's maximum use rates when tank mixing. Do not tank mix this product with any product containing a label prohibition against tank mixing with 2,4-D.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of this product and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing with Liquid Nitrogen Fertilizer: This product may be combined with liquid nitrogen fertilizer suitable for foliar application to accomplish broadleaf weed control and fertilization of corn, small grains or pastures in a single operation. Use GF-2654 in accordance with directions for these crops provided in this label. Use liquid fertilizer at rates recommended by the supplier or Extension Service Specialist. Test for mixing compatibility as described above before mixing in a spray tank. A compatibility aid such as Unite or Complex may be needed in some situations. Compatibility is best with liquid fertilizer solutions containing only nitrogen. Mixing with N-P-K solutions may not be satisfactory, even with the addition of a compatibility aid. Pre-mixing 1 part GF-2654 with up to 4 parts water may help in situations when mixing difficulty occurs.

Fill the tank about half full with the liquid fertilizer, then add the required amount of GF-2654 with agitation. Maintain agitation and complete filling the tank with liquid fertilizer. Apply immediately and

continue agitation in spray tank during application. **Do not store the spray mixture.** Application during very cold weather (near freezing) is not advisable.

Sprayer Clean-Out

To avoid injury to desirable plants, thoroughly clean equipment used to apply this product before re-use or applying other chemicals.

1. Rinse and flush application equipment thoroughly after use at least three times with water. Dispose of all rinse water by applying to treatment area or applying to non-cropland area away from water supplies.
2. During the second rinse, add 1 quart of household ammonia for every 25 gallons of water or use commercially available tank cleaner solution. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.
6. If equipment is to be used to apply another pesticide or agricultural chemical to a 2,4-D susceptible crop, additional steps may be required to remove all traces of 2,4-D, including cleaning of disassembled parts and replacement of hoses or other fittings that may contain absorbed 2,4-D.

Application Directions

Apply with calibrated air or ground equipment using sufficient spray volume to provide adequate coverage of target weeds or as otherwise directed in specific use directions. For broadcast application, use a spray volume of 3 gallons or more per acre by air and 10 gallons or more per acre for ground equipment. Where states have regulations which specify minimum spray volumes, they must be observed. In general, increase spray volume as crop canopy, height and weed density increase in order to obtain adequate spray coverage. **Do not apply less than 3 gallons total spray volume per acre.**

Application Rate

The lower dosages given will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species and under conditions where control is more difficult, the higher dosages will be needed.

Application Timing

Apply GF-2654 during warm weather when weeds are young and actively growing.

Spot Treatments

To prevent misapplication, apply spot treatments with a calibrated boom or with hand sprayers using a fixed spray volume per 1000 sq ft as indicated below.

Hand-Held Sprayers: Hand-held sprayers may be used for spot applications of GF-2654. Take care to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based upon the application rate for an area of 1000 sq ft. Mix the amount of GF-2654 (fl oz or mL) corresponding to the desired broadcast rate in 1 to 3 gallons of spray. To calculate the amount of GF-2654 required for larger areas, multiply the table value (fl oz or mL) by the thousands of sq ft to be treated. An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

Rate Conversion Table for Spot Treatment:

Label Broadcast Rate (pint/acre)							
1/2	2/3	3/4	1	2	3	4	8
Equivalent Amount of GF-2654 per 1000 sq ft							
1/5 fl oz (5.5 mL)	1/4 fl oz (7.3 mL)	1/3 fl oz (8.3 mL)	3/8 fl oz (11 mL)	3/4 fl oz (22 mL)	1 fl oz (33 mL)	1 1/2 fl oz (44 mL)	3 fl oz (88 mL)

Band Application

GF-2654 may be applied as a band treatment. Use the formulas below to determine the appropriate rate and volume per treated acre.

Band width in inches

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Band rate per treated acre}$$

Band width in inches

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Band volume per treated acre}$$

Weeds Controlled**Annual or Biennial Weeds**

beggarticks ¹	mousetail
bittercress, smallflowered	mustards (except blue mustard)
bitterweed	parsnip, wild
broomweed, common ¹	pennycress, field
burdock, common	pepperweed ¹
buttercup, smallflowered ¹	pigweeds (<i>Amaranthus</i> spp.) ¹
carpetweed	poorjoe
cinquefoil, common	primrose, common
cinquefoil, rough	purslane, common
cocklebur, common	pusley, Florida
coffeedweed	radish, wild
copperleaf, Virginia	ragweed, common
croton, Texas	ragweed, giant
croton, woolly	rape, wild
flixweed	rocket, yellow
galinsoga	salsify, common ¹
geranium, Carolina	salsify, western ¹
hemp, wild	shepherdspurse
horseweed (maretail)	sicklepod
jewelweed	smartweed (annual species) ¹
jimsonweed	sneezeweed, bitter
knotweed	sowthistle, annual
kochia	sowthistle, spiny
lambsquarters, common	spanishneedles
lettuce, prickly ¹	sunflower
lettuce, wild	sweetclover
lupines	tansymustard
mallow, little ¹	thistle, bull
mallow, Venice ¹	thistle, musk ¹
marshelder	thistle, Russian (tumbleweed) ¹
morningglory, annual	velvetleaf
morningglory, ivy	vetches
morningglory, woolly	

Perennial Weeds

alfalfa ¹	eveningprimrose, cutleaf
artichoke, Jerusalem ¹	garlic, wild ¹
aster, many-flower ¹	goldenrod
Austrian fieldcress ¹	hawkweed, orange ¹
bindweed (hedge, field and	healal

European) ¹	ironweed, western
blue lettuce	ivy, ground ¹
blüeweed, Texas	Jerusalem artichoke
broomweed	loco, bigbend
bullnettle ¹	nettles (including stinging) ¹
carrot, wild ¹	onion, wild
catnip	pennywort
chicory	plantains
clover, red ¹	ragwort, tansy ¹
cofeeweed	sowthistle, perennial
cress, hoary	thistle, Canada ¹
dandelion ¹	vervains ¹
docks ¹	waterplantain
dogbanes ¹	wormwood

¹May require application to small weeds, repeat applications, and/or use of higher specified rates of this product. Control at rates of 1 pint or less per acre may only be partial.

Specific Use Directions

Agricultural Use Requirements for Crops: For the following crop uses, follow PPE and re-entry instructions in the Agricultural Use Requirements section of this label.

Cereal Grains¹

¹Barley, millet, oats, rye, wheat

Application Timing	GF-2654 (pint/acre)	Use Directions
spring post-emergence barley, millet, rye, wheat,	2/3 - 1 1/3	Apply when weeds are small and actively growing. Use a lower rate in the rate range for small rapidly growing annual or biennial weeds and a higher rate in the rate range for perennial weeds or for annual or biennial weeds in advanced growth stages or when growing conditions are less than ideal. Postemergence: Apply after crop is fully tillered, (usually 4 to 8 inches tall), but not forming joints in the stems. Preharvest: Apply using air or ground equipment when crop is in dough stage of grain development to control or suppress weeds that might interfere with harvest.
oats	1/2 - 1	
preharvest (dough stage) all listed cereals	1	

Precautions:

- Up to 2.5 pints per acre may be applied postemergence to barley, millet, rye and wheat. However, there is greater risk of crop injury at rates greater than 1 1/3 pints per acre. Use such rates only when the need for weed control justifies additional risk to the crop.

Restrictions:

- Preharvest interval:** Do not apply within 14 days of grain harvest
- Do not apply more than a total of 3.68 pints of GF-2654 (1.75 lb of acid equivalent) per acre per use season.
- Limit use to no more than one post-emergence application and one preharvest application per crop season.
- Do not apply GF-2654 at the crop seedling stage of growth prior to tillering or from early boot (forming joints in the stem) through milk stage of grain development.** Consult state agricultural

experiment station or extension service weed specialists for recommendations or suggestions to fit local conditions.

- Do not apply if crop is underseeded with legumes.

Corn (Field, Sweet, Popcorn)

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant (burndown) preemergence field, sweet, popcorn	1 - 2	Use a higher rate in the rate range for less susceptible weeds or cover crops, weeds in advanced stages of development, or under less favorable growth conditions. Preplant: Apply 7 to 14 days before planting corn to control emerged broadleaf weed seedlings or existing cover crops. Preemergence: Apply any time after planting, but before corn emerges to control broadleaf weed seedlings or existing cover crops.
postemergence field, sweet, popcorn annual broadleaf weeds crop up to 8 inches tall	1/2 - 1	Apply when weeds are small and corn is less than 8 inches tall (to top of crop canopy). If corn is more than 8 inches tall, use drop nozzles and directed sprays to keep spray off of foliage.
crop 8 inches tall to tasseling (directed spray only)	1	Treat perennial weeds when they are in bud to bloom stage. Do not apply from tasseling to hard dough stage.
perennial broadleaf weeds		
preharvest field and popcorn only	up to 3	Apply after corn is in hard dough (or denting) stage. Do not apply preharvest to sweet corn.

Precautions:

- Preplant or preemergence applications to light sandy soils is not recommended.
- Corn hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your Agricultural Experiment Station or Extension Service Weed Specialist for this information.
- **Note:** Corn treated with 2,4-D may exhibit stem brittleness for 8 to 10 days following application. During this period, the crop is more susceptible to stem breakage from cultivation or wind.

Restrictions:

Field Corn and Popcorn:

- **Preharvest Interval:** Do not apply within 7 days of grain or fodder harvest.
- Do not make more than one preplant or preemergence application, one postemergence application, and one preharvest application per use season.
- Do not apply more than a total of 6.32 pints of GF-2654 (3 lb of acid equivalent) per acre per use season.

Sweet Corn:

- **Preharvest Interval:** Do not apply within 45 days of ear harvest.
- Do not use treated crop as fodder for 7 days following application.
- Do not make a postemergence application within 21 days after a previous application.
- Do not make more than one preplant or preemergence application and one postemergence application per use season.
- Do not apply more than a total of 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre per use season.

Fallow Land¹ and Crop Stubble

¹Fallow land is idle land, postharvest to crops or between crops.

Weeds	GF-2654 (pint/acre)	Use Directions
annual broadleaf	1 - 2	Use a lower rate in the rate range when weeds are small (2 to 3 inches tall) and actively growing. Use a higher in the rate range when weeds are larger and under less favorable growth conditions.
biennial broadleaf	2 - 4	Apply when musk thistles or other biennial species are in the seedling to rosette stage and before development of flower stalks. The lower rate in the rate range can be used in the spring during the rosette stage. Use the highest rate in the rate range in the fall or after flower stalks have developed.
perennial broadleaf		Apply when perennial weeds are in bud to early bloom stage or while in good vegetative growth.
wild garlic and onion in crop stubble	4	Apply to new regrowth of wild garlic or onion that occurs in the fall after harvest of small grains, corn or grain sorghum.

Precaution:

- For best weed control results, do not cultivate for at least two weeks after application or until top growth is dead.

Restrictions:

- Preharvest Interval:** Do not apply within 7 days of forage for hay harvest.
- Minimum Treatment Interval:** Do not apply within 30 days of a previous application.
- Do not apply more than a total of 8.4 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Do not apply more than two times per year.

Planting in Treated Areas

Labeled Crops: Within 29 days after an application of this product, plant only those crops listed on this or other registered 2,4-D labels. Follow more stringent limitations, if any, provided in directions for specific crops. Labeled crops may be at risk of crop injury or loss if planted soon after application, especially during the first 14 days. Degradation factors described below should be considered in weighing this risk.

Other Crops: All other crops may be planted 30 days or more after application without concern for illegal residues in the planted crop. However, under certain conditions, there may be a risk of injury to susceptible crops. Degradation factors described below should be considered in weighing this risk. Under normal conditions, any crop may be planted without risk of injury if at least 90 days of soil temperatures above freezing have elapsed since application.

Degradation Factors: When planting into treated areas, the risk of crop injury is less if lower rates of product were applied and conditions following application have included warm, moist soil conditions that favor rapid breakdown of 2,4-D. Risk is greater if higher rates of product were applied and soil temperatures have been cold and/or soils have been excessively wet or dry in the days following application. Consult your local agricultural extension service or information about susceptible crops and typical conditions in your area.

Pome Fruit (Crop Group 11)¹, Stone Fruit (Crop Group 12)², Tree Nuts (Excluding Filberts)³ and Pistachio Orchard Floors

¹Pome fruit (crop group 11) including apple, crabapple, loquat, mayhaw, oriental pear, pear, quince

²Stone fruit (crop group 12) including apricot, chickasaw plum, damson plum, Japanese plum, nectarine, peach, plum, plumcot, prune, sweet cherry, tart cherry

³Tree nuts including almond, beech nut, black walnut, Brazil nut, butternut, cashew, chestnut, chinquapin, English walnut, hickory nut, macadamia nut (bush nut), pecan

Application Timing	GF-2654 (pint/acre)	Use Directions
postemergence annual and biennial weeds	1 - 2	For application to orchard floors, use coarse, low pressure sprays and sufficient water for thorough coverage of weeds.
perennial weeds	up to 4	Apply to annual weeds when small and actively growing. Apply to perennial weeds from bud to bloom stage.

Precautions:

- Avoid application immediately before irrigation and withhold irrigation for two days before and three days after application.
- Newly established trees or young orchards are more susceptible to 2,4-D injury. Apply only to orchards that have been established for at least one year and are in vigorous growth condition.

Restrictions:

• Preharvest Intervals:

Pome Fruit: Do not apply within 14 days of harvest.

Stone Fruit: Do not apply within 40 days of harvest.

Tree Nuts and Pistachio: Do not apply within 60 days of harvest.

• Minimum Treatment Interval:

Pome Fruit and Stone Fruit: Do not apply within 75 days of a previous application.

Tree Nuts and Pistachio: Do not apply within 30 days of a previous application.

- Do not cut orchard floor forage for hay within 7 days after application.
- Do not make more than two applications per year.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- To avoid tree injury, do not allow spray drift to contact foliage, fruit, stems, trunks or trees or exposed roots.
- Do not apply when orchards are blooming.
- Do not make orchard floor applications in areas with light sandy soils.

Rice

(Not for Use in California)

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant	1 - 2	Apply 2 to 4 weeks before planting rice to control emerged broadleaf weeds.
postemergence	1 - 2 ¹	Apply when rice is in late tillering stage and at the time of first joint development (first to second green ring).

¹Up to 3 pints per acre may be applied postemergence for difficult weed control situations. However, there is greater risk of crop injury at rates greater than 2 pints per acre. Such rates should be used only when the need for weed control justifies additional risk to the crop.

Precautions:

- Some rice varieties under certain conditions or stages of growth may be injured by 2,4-D. Before applying, consult local university or agricultural extension service specialists regarding for local treatment recommendations for various rice varieties.

Restrictions:

- **Preharvest Interval:** Do not apply within 60 days of harvest.
- Do not apply more than one preplant and one postemergence application per use season.
- Do not apply more than a total of 3.16 pints of GF-2654 (1.5 lb of acid equivalent) per acre per use season.
- Do not apply at early seedling stage or after rice internodes exceed one-half inch or panicle initiation.

Sorghum - Grain Sorghum (Milo) and Forage

Application Timing	GF-2654 (pint/acre)	Use Directions
postemergence crop 6 - 8 inches tall	1/2 - 1	Apply when sorghum is 6 to 15 inches tall. If sorghum is more than 8 inches tall (to top of crop canopy), use drop nozzles and apply as a directed spray to keep spray off of foliage.
crop 8 - 15 inches tall (directed spray only)	3/4 - 1	

Precautions:

- Sorghum hybrids vary in tolerance to 2,4-D. Some are easily injured. Apply only to varieties known to be tolerant to 2,4-D. Consult the seed company or your agricultural experiment station or extension service weed specialist for this information.
- **Note:** Temporary crop injury can be expected under conditions of high soil moisture and high air temperatures. If it is necessary to apply GF-2654 under these conditions, use no more than 2/3 pint per acre.

Restrictions:

- **Preharvest Interval:** Do not apply within 30 days of grain harvest.
- Do not permit meat or dairy animals to consume treated crop as fodder or forage within 30 days after application.
- Do not apply more than a total of 2.1 pints of GF-2654 (1 lb of acid equivalent) per acre per use season.
- Do not apply more than one postemergence application per use season.
- **Do not apply during boot, or later stages of growth.**

Soybeans**(Preplant Burndown Only)**

Crop oil concentrates, agricultural surfactants and fluid fertilizers approved for use on growing crops may be added to spray mixtures of GF-2654 to increase the herbicidal effectiveness on certain weeds. Read and follow all directions and precautions on this label and on the label of each product added to the spray mixture. Refer to the Mixing Directions section for instructions for tank mixing and compatibility testing.

Application Timing	GF-2654 (pint/acre)	Use Directions
preplant (burndown)	3/4 - 1	Apply not less than 15 days before planting soybeans, when weeds are small and actively growing. Use a higher rate in the rate range on larger weeds and when perennials are present. See Precautions and Restrictions below.
	1 - 2	Apply not less than 30 days before planting soybeans, when weeds are small and actively growing. Use a higher rate in the rate range on larger weeds and when perennials are present. See Precautions and Restrictions below.

Precautions:

- **Important Notice:** Unacceptable injury to soybeans planted in treated fields may occur. Whether soybean injury occurs and the extent of such injury will depend upon weather (temperature and rainfall) from herbicide application until soybean emergence and agronomic factors such as the amount of weed vegetation and previous crop residue present at the time of application. Injury is more likely under cool rainy conditions and where there is less weed vegetation and crop residue present.
- In treated fields, plant soybean seed as deep as practical, but not less than 1 inch deep. Adjust the planter, if necessary, to ensure that planted seed is adequately covered.

Restrictions:

- Do not disturb treated soil through tillage between application and planting of soybeans.
- Do not use on sandy soils with less than 1% organic matter.
- Do not make more than one application per season regardless of the application rate used.
- Do not apply GF-2654 as a preplant application in soybeans unless the results of soybean injury are acceptable, including possible stand loss and/or yield reduction.
- During the growing season following application, do not replant treated fields with crops other than those labeled for use with GF-2654.
- Do not apply more than a total of 2.1 pints of GF-2654 (1 lb of acid equivalent) per acre per use season.

Sugarcane

Application Timing	GF-2654 (pint/acre)	Use Directions
preemergence postemergence	2 - 4	Consult your agricultural experiment station or extension service weed specialist local recommendations. Preemergence: Apply to actively growing weeds before cane emerges. Postemergence: Apply after cane emerges through canopy closure. Use a higher rate in the rate range for perennial weeds and difficult to control species.

Restrictions:

- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Do not harvest cane prior to maturity.
- Do not make more than one preemergence and one postemergence application per season.

Forestry, Rangeland, Established Grass Pastures, and Non-Cropland Areas

Agricultural Use Requirements for Forest Use (Except Tree Injection Use): For use in forests, follow PPE and re-entry instructions in the Agricultural Use Requirements section under the Directions for Use heading of this label.

Agricultural Use Requirements for Rangeland, Pasture, Forest (Tree Injection Only) and Non-Cropland Areas: When this product is applied to rangeland and established grass pastures not harvested for hay or seed; non-cropland areas, and when applied by tree injection in forest sites, follow re-entry requirements given in the Non-Agricultural Use Requirements section under the Directions for Use heading of this label.

Forestry

Forest site preparation, forest roadsides, brush control, established conifer release (including Christmas trees and reforestation areas)

Application Method	GF-2654	Use Directions
annual weeds	2 - 4 pt/acre	Apply before the bud stage when weeds are small and growing actively. Apply when biennial and perennial species are in the seedling to rosette stage and before flower stalks appear. For difficult to control perennial broadleaf weeds and woody species, use up to 1 gallon of GF-2654 and 1 to 4 quarts of Garlon® 3A herbicide per acre. For conifer release, apply before budbreak of conifers in early spring when weeds are small and actively growing.
biennial and perennial broadleaf weeds susceptible woody plants	4 - 8 pt/acre	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the specified broadcast rate and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
conifer release species such as balsam fir black spruce jack pine ponderosa pine red pine red spruce white pine white spruce	1 1/2 - 3 qt/acre	To control competing hardwood species such as alder, aspen, birch, hazel, and willow, apply from mid- to late summer when growth of conifer trees has hardened off and woody plants are still actively growing. Apply with ground equipment using sufficient spray volume to ensure complete coverage. Because this treatment may cause occasional conifer injury, do not apply if such injury cannot be tolerated.
directed spray: conifer plantations including pine	4 qt/100 gal	Apply when brush or weeds are actively growing by directing the spray so as to avoid contact with conifer foliage and injurious amounts of spray. Apply in oil, oil-water, or water carrier in a spray volume of 10 to 100 gallons per acre.
basal spray (may also be used in rangeland, pastures, and non-cropland areas)	8 qt/100 gal or	Thoroughly wet the base and root collar of all stems until the spray begins to accumulate around the root collar at the ground line. Wetting stems with the mixture may also aid in control.
cut stump surfaces (may also be used in rangeland, pastures, and non-cropland areas)	2.5 fl oz/gal of water	Apply as soon as possible after cutting trees. Thoroughly soak the entire stump with the 2,4-D mixture including cut surface, bark and exposed roots.
frill and girdle (may also be used in rangeland, pastures, and non-cropland areas)		Cut frills (overlapping V-shaped notches cut downward through the bark in a continuous ring around the base of the tree) using an axe or other suitable tool. Treat freshly cut frills with as much of the 2,4-D mixture as they will hold.
tree injection (may also be used in rangeland, pastures, and non-cropland areas)	1 - 2 mL per injection site	To control unwanted hardwood trees such as elm, hickory, oak, and sweetgum in forests and other non-crop areas, apply by injecting at a rate of 1 mL of undiluted GF-2654 per inch of trunk diameter at breast height (DBH) as measured approximately 4 1/2 ft above the ground. However, inject as close to the root

Application Method	GF-2654	Use Directions
		<p>collar as possible and the injection bit must penetrate the inner bark. Make applications throughout the year, but for best results, apply between May 15 and October 15. Do not treat maples during the spring sap flow.</p> <p>For hard to control species such as ash, maple, and dogwood, use 2 mL of undiluted GF-2654 per injection site or double the number of 1 mL injections.</p> <p>Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants.</p>

Restrictions:

- Do not allow sprays to contact conifer shoot growth (current year's new growth) or injury may occur.
- Do not apply to nursery seed beds.
- For conifer release, do not use on plantations where pine or larch are among the desired species.
- For broadcast applications, do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per 12-month period.
- Limited to one broadcast application per year
- For basal spray, cut surface stumps, and frill applications, do not apply more than 16.84 pints of GF-2654 (8 lb of acid equivalent) per 100 gallons of spray solution.

Rangeland and Established Grass Pastures (Including Perennial Grasslands not in Agricultural Production Such as Conservation Reserve Program Acres)

Weeds or Woody Plants	GF-2654 (pint/acre)	Use Directions
annual broadleaf weeds	2	For best results, apply before the bud stage when weeds are small and growing actively. Apply before flower stalks appear, when musk thistles or other biennial species are in the seedling to rosette stage. Refer to the Weeds Controlled section for a listing of susceptible weed species and weeds that may be only partially controlled and require repeat applications and/or use of higher specified rates, even under ideal conditions of application.
biennial and perennial broadleaf weeds	2 - 4	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate specified for this treatment site and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
tree injection application		See instructions for tree injection application in Forestry section.
wild garlic and wild onion	4	Make three applications (fall-spring-fall or spring-fall-spring) starting in late fall or early spring.
broadleaf weed control in newly sprigged coastal bermudagrass	2 - 4	Apply either preemergence or postemergence. Follow use directions for annual, biennial and perennial broadleaf weed control above.

Weeds or Woody Plants	GF-2654 (pint/acre)	Use Directions
sand shinnery oak sand sagebrush	2	Sand shinnery oak: Apply by aircraft between May 15 and June 15. Sand sagebrush: Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre.
big sagebrush rabbitbrush	4	Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use a 1:4 oil-water emulsion as carrier and a spray volume of 3 to 5 gallons per acre. Re-treatment may be needed.
buckbrush chamise chaparral species coastal sage coyotebrush manzanita		Apply by ground or aircraft when foliage is fully expanded and plants are actively growing. Use water or 1:4 oil-water emulsion as carrier and a spray volume of 5 to 10 gallons per acre. Re-treatment may be needed.
southern wild rose broadcast application	up to 4	Broadcast: Apply in a spray volume of 5 gallons or more per acre by aircraft or 10 gallons or more per acre by ground equipment. Spot treatment: Apply when foliage is well developed. Thorough coverage is required. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. Two or more treatments may be required.
spot treatment	1.28 fl oz/gal of spray solution	Do not exceed 4 pints per acre per application.

Precautions:

- If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of forage harvest. For program lands, such as CRP, consult program rules to determine whether grass or hay may be used. The more restrictive requirements of the program rules or this label must be followed.
- **Minimum Treatment Interval:** Do not apply within 30 days of a previous application.
- Do not use on bentgrass, alfalfa, clover, or other legumes.
- Do not use on newly seeded areas until grass is well established.
- Do not use from early boot to milk stage where grass seed production is desired.
- For grazed areas, the maximum use rate is 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Do not make more than two applications per season.
- For susceptible annual and biennial broadleaf weeds: Do not apply more than 2 pints of GF-2654 (1 lb of acid equivalent) per acre per application.
- For moderately susceptible biennial, perennial broadleaf weeds and difficult to control weeds and woody plants: Do not apply more than 4 pints of GF-2654 (2 lb of acid equivalent) per acre per application.

- Spot treatment: Do not apply more than 4 pints of GF-2654 (2 lb of acid equivalent) per acre.

Non-Cropland Areas

Such as fencerows, hedgerows, roadsides, drainage ditches, rights-of way, utility power lines, railroads, airports, and other non-cropland areas

Application Method	GF-2654 (pint/acre)	Use Directions
annual broadleaf weeds	2 - 4	Apply before the bud stage when annual weeds are small and growing actively. Biennial and perennial weeds should be rosette to bud stage, but not flowering at the time of application. For difficult to control perennial broadleaf weeds and woody species, tank mix up to 1 gallon of GF-2654 plus 1 to 4 quarts of Garlon 3A per acre. For ground application: (High volume) apply a total of 100 to 400 gallons per acre; (low volume) apply a total of 10 to 100 gallons per acre. For helicopter: Apply a total of 5 to 30 gallons per acre spray volume.
biennial and perennial broadleaf weeds	4	
susceptible woody plants on rights-of-way	4 - 8	
spot treatment to control broadleaf weeds	1.28 fl oz/gal of spray solution (see instructions for Spot Treatment)	To control broadleaf weeds in small areas with a hand sprayer, use an application rate equivalent to the broadcast rate specified for this treatment site and spray to thoroughly wet all foliage. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. See rate conversion table and instructions for Spot Treatment and use of hand-held sprayers under Application Directions.
tree injection application		See instructions for tree injection application in Forestry section.
southern wild rose broadcast application	up to 4	Broadcast: Apply in a spray volume of 10 gallons or more per acre by ground equipment. Apply when foliage is well developed. Thorough coverage is required. Mix 1.28 fl oz per gallon of spray solution and apply through pump up sprayer or backpack sprayer. Addition of a non ionic surfactant is recommended to improve coverage. Two or more treatments may be required.
spot treatment	1.28 fl oz/gal of spray solution	

Precautions:

- Bentgrass, St. Augustine, clover, legumes and dichondra may be severely injured or killed by this treatment.

Restrictions:

- Do not apply to newly seeded areas until grass is well established.

• Annual and perennial weeds:

Minimum Treatment Interval: Do not reapply to a treated area within 30 days of a previous application.

Do not apply more than 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application.

Do not make more than two applications per season.

• Woody plants:

Do not apply more than 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.

Do not make more than one application per season.

Turfgrass

Turfgrass Grown for Seed or Sod Farms

Agricultural Use Requirements: When used in grass grown for seed or sod farms, follow PPE and reentry instructions in the Agricultural Use Requirements section of this label.

Application Timing	GF-2654 (pint/acre)	Use Directions
turfgrass grown for seed (postemergence) seedling grass (five-leaf stage or later)	3/4 - 1	Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Do not apply to newly seeded grasses until well established (five-leaf stage or later) and then use a maximum of 1 pint per acre. Cool season turfgrass is tolerant of higher rates.
well-established grasses	1 - 4	Do not apply to turfgrass in the early boot through milk stage if seed production is desired. When turfgrass is well established, higher rates of up to 4 pints per acre may be applied for control of hard to kill annual or perennial weeds.
sod farms (postemergence)	2 - 4	Deep-rooted perennials such as bindweed and Canada thistle may require repeat applications. Avoid mowing sod farms for 1 to 2 days before or after application. Delay irrigation until the day following application.

Precautions:

- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and, with fall application, reseed in the spring.

Restrictions:

- **Preharvest Interval:** Do not apply within 7 days of cutting forage for hay.
- **Minimum Treatment Interval:** Do not reapply to a treated area within 21 days of a previous application.
- Do not use on creeping grasses such as bent except as a spot treatment.
- Do not use on injury-sensitive southern turfgrass such as St. Augustinegrass.
- Do not use on dichondra or other herbaceous groundcovers. Legumes may be damaged or killed.
- Do not apply more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.
- Maximum of 2 lb acid equivalent (4.2 pints of GF-2654) per acre per application.
- Do not make more than two applications of GF-2654 per use season.

Ornamental Turfgrass (Excluding Turfgrass Grown for Seed or Sod Farms)

(Includes lawns, golf courses, cemeteries and parks, airfields, roadsides, vacant lots, drainage ditch banks)

Use Requirements for Ornamental Turfgrass Areas: When this product is applied to ornamental turfgrass areas, follow PPE and reentry instructions in the Non-Agricultural Use Requirements section of this label.

Application Timing	GF-2654 (pint/acre)	Use Directions
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Application Timing	GF-2654 (pint/acre)	Use Directions
ornamental turfgrass (postemergence) seedling grass (five-leaf stage or later)	3/4 - 1	Apply when weeds are small and actively growing. For best results, apply when soil moisture is adequate for active weed growth. Deep-rooted perennial weeds such as bindweed and Canada thistle may require repeat applications. Do not apply to newly seeded turfgrass until well established (five-leaf stage or later) and then use a maximum of 1 pint per acre. Cool season turfgrass is tolerant of higher rates.
well-established turfgrass	2 - 3	
biennial and perennial broadleaf weeds	3	

Precautions:

- **Reseeding:** Delay reseeding at least 30 days following application. Preferably, with spring application, reseed in the fall and, with fall application, reseed in the spring.

Restrictions:

- **Minimum Treatment Interval:** Do not reapply within 21 days of a previous application.
- Do not use on creeping grasses such as bent except as a spot treatment.
- Do not use on injury-sensitive southern turfgrass such as St. Augustinegrass.
- Do not use on dichondra or other herbaceous groundcovers. Legumes may be damaged or killed.
- Do not make more than two broadcast applications per year per treatment site (does not include spot treatments).
- Do not apply more than a total of 6.32 pints of GF-2654 per acre (3 lb of acid equivalent) per year.

Aquatic Uses

Use Requirements for Aquatic Areas: When this product is applied to aquatic areas, follow PPE and re-entry instructions in the Non-Agricultural Use Requirements section of this label.

Banks of Irrigation Canals and Ditches

Weeds	GF-2654 (pint/acre)	Use Directions
annual	2 - 4	Apply using low pressure spray (10 to 40 psi) in a spray volume of 20 to 100 gallons per acre using power operated spray equipment. Apply when wind speed is low, 5 mph or less. Apply working upstream to avoid accidental concentration of spray into water. Do not spray cross-stream to opposite banks and avoid boom spraying over water surface. When spraying shoreline weeds, allow no more than a 2-foot overspray onto water surface with an average of less than 1 foot of overspray to prevent significant water contamination. Apply before the bud stage when weeds are small and growing actively. Apply before flower stalks appear when biennial and perennial species are in the seedling to rosette stage. For hard to control weeds, a repeat application after 30 days at the same rate may be needed. For woody species and patches of perennial weeds, mix 1 gallon of GF-2654 per 64 to 150 gallons of total spray. Wet foliage by applying about 3 to 4 gallons of spray per 1000 sq ft (10.5 X 10.5 steps).
biennial and perennial broadleaf susceptible wood plants	4	

Restrictions:

- Do not make more than two treatments per season or reapply within 30 days.
- Use 2 gallons or more of spray solution per acre.
- Do not apply more than 4.21 pints of GF-2654 (2 lb of acid equivalent) per acre per application or more than a total of 8.42 pints of GF-2654 (4 lb of acid equivalent) per acre per use season.

Do not use on small canals with a flow rate less than 10 cubic feet per second (CFS) where water will be used for drinking purposes. CFS may be estimated by using the formula below. Determine the approximate velocity needed for the calculation by observing the length of time that it takes a floating object to travel a defined distance. Divide the distance (ft) by the time (sec) to estimate velocity (ft per sec). Repeat three times and use the average to calculate CFS.

Average Width (ft) x Average Depth (ft) x Average Velocity (ft per sec) = CFS

Ditchbank Weeds: Do not spray cross-stream to opposite bank. Do not allow boom spray to be directed onto water.

Shoreline Weeds: Boom spraying onto water surface must be held to a minimum and allow no more than a 2-foot overspray onto water with an average of less than 1 foot overspray to prevent introduction of greater than negligible amounts of chemical into the water.

Ponds, Lakes, Reservoirs, Marshes, Bayous, Drainage Ditches, Canals, Rivers and Streams That are Quiescent or Slow Moving, Including Programs of the Tennessee Valley Authority

Notice to Applicators: Before application, coordination and approval of local and state authorities may be required, either by letter or agreement or issuance of special permits for aquatic applications.

Emergent and Floating Aquatic Weeds Including Water Hyacinth (*Eichornia crassipe*):

Application Rate: 2 to 4 quarts per acre.

Application Timing: Spray weed mass only. Apply when water hyacinth plants are actively growing. Reapply as necessary to kill regrowth and plants missed in previous operation. Use the 4 quart per acre rate when plants are mature or when weed mass is dense.

Surface Application: Use power operated sprayers with boom or spray gun mounted on boat, tractor or truck. Thorough wetting of foliage is essential for maximum control. Use 100 to 400 gallons of spray mixture per acre. Take special precautions such as use of low pressure, large nozzles and spray thickening agents to avoid spray drift to susceptible crops. Follow label directions for use of any drift control agent.

Aerial Application: Use drift control spray equipment or thickening agent mixed in the spray mixture. Apply 1 gallon of GF-2654 per acre with standard boom systems using a minimum spray volume of 5 gallons per acre. For Microfoil drift control spray systems, apply GF-2654 in a total spray volume of 12 to 15 gallons per acre.

Restrictions for Surface Applications to Emergent Aquatic Weeds:

- **Minimum Treatment Interval:** Minimum of 21 days between applications.
- Do not apply more than 8.42 pints of GF-2654 per acre (4 lb of acid equivalent) per surface acre.
- Spot treatments are permitted.
- Limited to two applications per season.

Fish breathe dissolved oxygen in the water and decaying weeds also use oxygen. When treating continuous, dense weed masses, it may be appropriate to treat only part of the infestation at a time. For example, apply the product in lanes separated by untreated strips that can be treated after vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2- to 3-week period following treatment. Waters having limited and less dense weed infestations may not require partial

treatments. Other local factors such as water exchange and sediment load can also influence the dissolved oxygen level. Coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for aquatic applications.

Water Use:

1. Water for irrigation or sprays:

- A. If treated water is intended to be used only for crops or non-cropland areas that are labeled for direct treatment with 2,4-D such as pastures, turfgrass or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at anytime after the 2,4-D aquatic application.
- B. Due to potential phytotoxicity considerations, the following restrictions are applicable: If treated water is intended to be used to irrigate or mix sprays for plants grown in commercial nurseries and greenhouses, and other plants or crops that are not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:
 - i. A setback distance from functional water intake(s) of ≥ 600 ft was used for the application, or,
 - ii. A waiting period of 7 days from the time of application has elapsed, or,
 - iii. An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. Wait at least 3 days after application before initial sampling at water intake.

2. Drinking water (potable water):

- A. Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits. The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb. Applicators should consider the unique characteristics of the treated waters to assure that 2,4-D concentrations in potable water do not exceed 70 ppb at the time of consumption.
- B. For floating and emergent weed applications, the drinking water setback distance from functioning potable water intakes is ≥ 600 ft.
- C. If no setback distance of ≥ 600 ft is used for the application, applicators or the authorizing organization must provide a drinking water notification prior to a 2,4-D application to the party responsible for a public water supply or to individual private water users. Notification to the party responsible for a public water supply or to individual private water users must be done in a manner to assure that the party is aware of a water use restriction when this product is applied to potable water.

The following is an example of notification via posting, but other methods of notification that convey the above restrictions may be used and may be required in some cases under state or local law or as a condition of a permit.

Example: Locate posting notification every 250 feet including the shoreline of the treated area and up to 250 feet of shoreline past the application site to include immediate public access points. Posting must include the day and time of application. Posting may be removed if analysis of a sample collected at the intake 3 days or more following application shows that the concentration in the water is less than 70 ppb (100 ppb for irrigation or sprays), or after 7 days following application, whichever occurs first.

Text of Notification: Wait 7 days before diverting functioning surface water intakes from the treated aquatic site to use as drinking water, irrigation, or sprays, unless water at functioning drinking water intakes is tested at least 3 days after application and is demonstrated by assay to contain not more than 70 ppb 2,4-D (100 ppb for irrigation or sprays).

Application Date: _____ Time: _____.

- D. Following each application of this product, do not use treated water for drinking water unless one of the following restrictions has been observed:
 - i. A setback distance from functional water intake(s) of ≥ 600 ft was used for the application, or,
 - ii. A waiting period of at least 7 days from the time of application has elapsed, or,

- iii. An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less at the water intake. Sampling for drinking water analysis should occur no sooner than 3 days after a 2,4-D application. Analysis of samples must be completed by a laboratory that is certified under the Safe Drinking Water Act to perform drinking water analysis using a currently approved version of analytical Method Number 515, 555, other methods for 2,4-D as may be listed in Title 40 CFR Part 141.24, or Method Number 4015 (immunoassay of 2,4-D) from U.S. EPA Test Methods for Evaluating Solid Waste SW-846.
- E. **Note:** Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.
- F. Drinking water setback distances do not apply to terrestrial applications of 2,4-D adjacent to water bodies with potable water intakes.

Submerged Aquatic Weeds Including Eurasian Water Milfoil (*Myriophyllum spicatum*):

Sites	Maximum Application Rate ¹	Use Directions
aquatic weed control in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, rivers and streams that are quiescent or slow moving, including programs of the Tennessee Valley Authority	2.84 gallons (10.8 lb of acid equivalent) per acre foot	<p>Application Timing: For best results, apply in spring or early summer when aquatic weeds appear. Check for weed growth in areas heavily infested the previous year. A second application may be needed when weeds show signs of recovery, but no later than mid-August in most areas.</p> <p>Subsurface Application: Apply undiluted GF-2654 directly to the water through a boat mounted distribution system. Treat shoreline areas by subsurface injection application by boat to avoid aerial drift.</p> <p>Surface Application: Use power operated boat mounted boom sprayer. If rate is less than 5 gallons per acre, dilute to a minimum spray volume of 5 gallons per surface acre.</p> <p>Aerial Application: Use drift control spray equipment or thickening agents mixed with sprays to reduce drift. Apply through standard boom systems in a minimum spray volume of 5 gallons per surface acre. For Microfoil drift control spray systems, apply GF-2654 in a total spray volume of 12 to 15 gallons per acre. Apply to attain a concentration of 2 to 4 ppm (see table below).</p>

¹GF-2654 contains 3.8 lb of acid equivalent per gallon of product.

Table 1: Amount to Apply for a Target Subsurface Concentration					
Surface Area (acre)	Average Depth (ft)	For typical conditions – 2 ppm (2,4-D a.e./acre)	For typical conditions – 2 ppm (GF-2654 gal/acre)	For difficult conditions – 4 ppm ¹ (2,4-D a.e./acre)	For difficult conditions – 4 ppm ¹ (GF-2654 gal/acre)
1	1	5.4	1.42	10.8	2.84
	2	10.8	2.84	21.6	5.68
	3	16.2	4.26	32.4	8.53
	4	21.6	5.68	43.2	11.37
	5	27.0	7.10	54.0	14.21

¹Examples include spot treatments of pioneer colonies of eurasian water milfoil and certain difficult to control aquatic species.

Restrictions for Aquatic Sites With Submerged Aquatic Weeds:

- **Minimum Treatment Interval:** Do not apply within 21 days of previous application.
- Limited to two applications per season.
- Do not exceed 10.8 lb acid equivalent per acre foot.

Fish breathe oxygen in the water and a water-oxygen ratio must be maintained. Decaying weeds use up oxygen, but during the period when applications should be made, the weed mass is fairly sparse and the weed decomposition rate is slow enough that the water-oxygen ratio is not disturbed by treating the entire area at one time. If treatments must be applied later in the season when the weed mass is dense and repeat treatments are needed, apply product in lanes, leaving buffer strips which can then be treated when vegetation in treated lanes has disintegrated. During the growing season, weeds decompose in a 2- to 3-week period following treatment.

When treating moving bodies of water, apply while traveling upstream to prevent concentration of 2,4-D downstream from the application.

Coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for such use.

Water Use:

1. Water for irrigation or sprays:

- A. If treated water is intended to be used only for crops or non-cropland areas that are labeled for direct treatment with 2,4-D such as pastures, turfgrass or cereal grains, the treated water may be used to irrigate and/or mix sprays for these sites at anytime after the 2,4-D aquatic application.
- B. Due to potential phytotoxicity and/or residue considerations, the following restrictions are applicable. If treated water is intended to be used to irrigate or mix sprays for unlabeled crops, non-cropland areas, or other plants not labeled for direct treatment with 2,4-D, the water must not be used unless one of the following restrictions has been observed:
 - i. A setback distance described in the Drinking Water Setback Table was used for the application, or,
 - ii. A waiting period of 21 days from the time of application has elapsed, or,
 - iii. An approved assay indicates that the 2,4-D concentration is 100 ppb (0.1 ppm) or less at the water intake. See Table 3 for the waiting period after application but before taking the initial sampling at water intake.

2. Drinking water (potable water):

- A. Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits. The potable water use restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of 2,4-D in the water is less than the MCL (Maximum Contaminant Level) of 70 ppb. Applicators should consider the unique characteristics of the treated waters to assure that 2,4-D concentrations in potable water do not exceed 70 ppb at the time of consumption.
- B. For submerged weed applications, the drinking water setback distances from functioning potable water intakes are provided in Table 2 Drinking Water Setback Distance (below).
- C. If no setback distance from the Drinking Water Setback Table (Table 2) is used for the application, applicators or the authorizing organization must provide a drinking water notification and an advisory to shut off all potable water intakes prior to a 2,4-D application. Notification to the party responsible for a public water supply or to individual private water users must be done in a manner to assure that the party is aware of the water use restrictions when this product is applied to potable water.

The following is an example of notification via posting, but other methods of notification that convey the above restrictions may be used and may be required in some cases under state or local law or as a condition of a permit.

Example: Posting notification should be located every 250 feet including the shoreline of the treated area and up to 250 feet of shoreline past the application site to include immediate public access points. Posting must include the day and time of application. Posting may be removed if analysis of a sample collected at the intake no sooner than stated in Table 3 (below) shows that the concentration in the water is less than 70 ppb (100 ppb for irrigation or sprays), or after 21 days following application, whichever occurs first.

Text of Notification: Wait 21 days before diverting functioning surface water intakes from the treated aquatic site to use as drinking water, irrigation, or sprays, unless water at functioning drinking water intakes is tested no sooner than (insert days from Table 3) and is demonstrated by assay to contain not more than 70 ppb 2,4-D (100 ppb for irrigation or sprays).

Application Date: _____ Time: _____

- D. Following each application of this product, do not use treated water for drinking water unless one of the following restrictions has been observed:
- A setback distance described in the Drinking Water Setback Distance Table was used for the application, or,
 - A waiting period of at least 21 days from the time of application has elapsed, or,
 - An approved assay indicates that the 2,4-D concentration is 70 ppb (0.07 ppm) or less at the water intake. Sampling for drinking water analysis should occur no sooner than stated in Table 3. Analysis of samples must be completed by a laboratory that is certified under the Safe Drinking Water Act to perform drinking water analysis using a currently approved version of analytical Method Number 515, 555, other methods for 2,4-D as may be listed in Title 40 CFR, Part 141.24, or Method Number 4015 (immunoassay of 2,4-D) from U.S. EPA Test Methods for Evaluating Solid Waste SW-846.
- E. **Note:** Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.
- F. Drinking water setback distances do not apply to terrestrial applications of 2,4-D adjacent to water bodies with potable water intakes.

Table 2: Drinking Water Setback Distance for Submerged Weed Applications

Application Rate and Minimum Setback Distance From Functioning Potable Water Intake (ft)			
1 ppm ¹	2 ppm ¹	3 ppm ¹	4 ppm ¹
600	1200	1800	2400

¹ppm acid equivalent target water concentration

Table 3: Sampling for Drinking Water Analysis After 2,4-D Application for Submerged Weed Applications

Minimum Days After Application Before Initial Water Sampling at the Functioning Potable Water Intake			
1 ppm ¹	2 ppm ¹	3 ppm ¹	4 ppm ¹
5	10	10	14

¹ppm acid equivalent target water concentration

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT PERMITTED BY LAW, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitation of Remedies in any manner.

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EPA accepted ___/___/___

PRIA DUE: 4/20/11

62719-AGU

2,4-D CHOLINE SALT – DOW AGROSCIENCES



Note to: File

From: Michael Walsh, RD/Herbicide Branch, Tel: 308-2972

Re: New Product Registration, R310
Product Name: GF-2654
EPA Registration Number: 62719-634 (-AGU)
Submission Date: September 29, 2010
Decision Number: 440743

Action

- Registration of a new 2,4-D choline salt end-use product.
- No identical or similar product was cited in the documentation accompanying the original submission. When contacted, the registrant (Cindy Loy) cited 62719-3 as the template for the product label.

TRB Reviews

Chemistry (H. Mukhoti, March 22, 2011)

- The basic and alternate CSFs dated August 19, 2010 are acceptable.
- Group A & B data requirements are satisfied, with the exception of Storage Stability and Corrosion Characteristics (SSCC). SSCC studies are required within 15 months of the date on the Notice of Registration.

Toxicology (B. Hanson, March 21, 2011)

- Comment #4 states "...No precautionary, first aid, or PPE label language changes are required."

Label Review

- **Use Rates** – The proposed use rates in the Directions for Use are below the maximum use rates referenced in the the 2,4-D Reregistration Eligibility Document (RED) requirements. There are numerous comments regarding additional use rate restrictions required by the RED.
- **Cited Product** - The proposed product label is almost identical to the label for 62719-3 approved on June 14, 2010.
- **Use Sites** – All of the use sites on the proposed label are listed in the 2,4-D RED and are on the cited product.

FEE

DP BAR CODE NO.: 383748
PC Code(s): 051505
FOOD Use: Yes

FILE SYMBOL NO.: 62719-AGU DECISION NO.: 440743
ACTION CODE: R310
NON-FOOD Use: Yes

DATE OUT: March 22, 2011

SUBJECT: End Use Product Chemistry Review
Product Name: GF-2654

FROM: Hari Mukhoty
Product Chemistry Team
Technical Review Branch / Registration Division (7505P)

Handwritten: HME. 8/18/11 3/23/11

TO: Michael Walsh / Kathryn Montague PM - 23
Herbicide Branch / Registration Division (7505P)

Company Name: Dow AgroSciences LLC
Formulation Type: Liquid

INTRODUCTION:

The Registrant has submitted one basic CSF (dated: 08/19/2010), one amended CSF (dated 08/19/2010) as an alternate formulation (Alt. # 1) to the aforesaid basic and a proposed product specific label (dated: 09/29/2010) for registration of the aforesaid products under EPA File Symbol No. 62719-AGU. The registrant submitted product chemistry data under MRIDs: 482346-01 and, -02 to support the registration of the proposed products.

The primary review of the product chemistry data was performed by a contractor (document attached at the last page of this review) and TRB is conducting the secondary review.

TRB has been requested to evaluate the product chemistry data required for the registration of the proposed basic and alternate products.

SUMMARY OF FINDINGS:

1. Name of Active Ingredient(s): 2,4-Dichlorophenoxyacetic acid, choline salt (56.3%).
2. The source materials of the active ingredients are registered with the Agency (the source material of the active ingredient used in the alternate formulation EPA File Symbol: 62719-AGE submitted under CSF dated: 03/03/2011 has been reviewed by TRB and found to be acceptable on 03/07/2011).
3. All inert ingredients have been screened by IIAB on 10/12/2010 and have been found to be approved for food (40 CFR 180.920) and non-food uses.
4. The CSFs of the proposed basic and alternate formulations have been filled out completely and correctly. The certified limits of the active ingredient used in the basic product match with that of the alternate formulation.

DP BAR CODE NO.: 383748
PC Code(s): 051505
FOOD Use: Yes

FILE SYMBOL NO.: 62719-AGU DECISION NO.: 440743
ACTION CODE: R310
NON-FOOD Use: Yes

4. Confidential Statement of Formula(s):

[X] Basic - Dated: 08/19/2010 re-submitted - Dated: NA

[X] Alternate # 1 - Dated: 08/19/2010 re-submitted: Dated: NA

Alternate CSF(s) complies with 40CFR §152.43: [X] Yes [] No.

5. Product label

a. Ingredient statement: Nominal concentration of AI listed on CSF(s) concur with product label (PR Notice 91-2)

[X] Yes

Metallic equivalent: [] Yes [X] NA;

Soluble arsenic: [] Yes [X] NA

Isomeric ratios: [] Yes [X] NA

Acid equivalent: [] Yes [X] 38.4%

b. Health related sub statements:

Petroleum distillate at > 10%: [] Yes [] No [X] NA

Methanol at > 4%: [] Yes [] No [X] NA

c. Physical chemical hazard statement: Product label requires a statement per 40 CFR §156.78 for: flammability, explosive potential or electric insulator breakdown?

[] Yes [X] No

Total Release Fogger PR Notice 98-6 (40 CFR 156.78 d): [] Yes [] No [X] NA

Is the sub statement in compliance with PR Notice 97-6?

[X] Yes [] No - Uses the term "Other Ingredients"
, if not, explain below:

d. Label requires an additional Storage and Disposal statement: [] Yes [X] No - from product chemistry point of view; if yes explain below:

Final decision of overall label acceptance will be made by the PM.

DP BAR CODE NO.: 383748
 PC Code(s): 051505
 FOOD Use: Yes

FILE SYMBOL NO.: 62719-AGU DECISION NO.: 440743
 ACTION CODE: R310
 NON-FOOD Use: Yes

6. Group A: Product Chemistry Data

TRB's determination of the acceptability of the data for the proposed product is listed in the tables below.

Guideline No.	Study Title	Data submitted		TRB's Assessment of Data	MRID Nos. 482346-01
		Yes	No		
830.1550	Product Identity & Composition	X		A	"
830.1600	Description of materials used to produce the product	X		A	"
830.1650	Description of formulation process	X		A	"
830.1670	Discussion on the formation of impurities	X		A	"
830.1700	Preliminary analysis	NA			
830.1750	Standard certified Limits	X		A	"
	Certified limits (158.350)				
	Proposed Limits Justification for wider limits				
830.1800	Enforcement analytical method	X			
		LC/UV detect or set at 280 nm		A	"

A = Acceptance, NA = Not Acceptable, G = Data Gap,
 W = Waiver Request, I = In Progress, NA = Not Applicable

DP BAR CODE NO.: 383748
PC Code(s): 051505
FOOD Use: Yes

FILE SYMBOL NO.: 62719-AGU DECISION NO.: 440743
ACTION CODE: R310
NON-FOOD Use: Yes

7. Group B:

Guideline No.	Study Title	Value or Qualitative Description	TRB's Assessment of Data	MRID Nos. 482346-02
830.6303	Physical State	Liquid	A	"
830.6315	Flammability	Flash Point > 212° F	A	"
830.6316	Explodability	Not potentially explosive	A	"
830.7000	pH	4.71	A	"
830.7300	Density (units)	1.1883 g/mL	A	"

A = Acceptance, N = Not Acceptable, G = Data Gap, W = Waiver request,
NA = Not applicable, I = In progress

CONCLUSIONS:

1. TRB has reviewed the CSFs (dated: 08/19/2010) for the proposed basic and alternate products and has found it to be acceptable. The CSFs are attached with this review in OPPIN CHEM DOCS.
2. Product chemistry Group A and Group B data, with the exception of one year storage stability (830.6317) and corrosion characteristics (830.6320) are satisfied and acceptable.
3. The registrant must generate one year storage stability (830.6317) and corrosion characteristics (830.6320) data on the proposed product. It is required that the observations be made at 0, 3, 6, 9, and 12 month intervals. The results must be submitted to the Agency in electronic and hard copy format.
4. The proposed label was screened as it pertains to the product chemistry requirements. The final review of the proposed label and uses are the purview of the PM team.

DATA EVALUATION RECORD

ETHANAMINIUM (GF-2654)

STUDY TYPES: Product Identity and Composition (OPPTS 830.1550)
Description of Materials Used to Produce the Product (OPPTS 830.1600)
Description of Production Process (830.1620)
Discussion of Formation of Impurities (OPPTS 830.1670)
Preliminary Analysis (OPPTS 830.1700)
Certified Limits (OPPTS 830.1750)
Enforcement Analytical Method (OPPTS 830.1800)
Physical and Chemical Characteristics (OPPTS 830.6302-830.7950)

MRIDs 482346-01 through 482346-03

Prepared for
Registration Division
Office of Pesticide Programs
U.S. Environmental Protection Agency
One Potomac Yard
2777 South Crystal Drive
Arlington, VA 22202

Prepared by
Toxicology and Hazard Assessment Group
Environmental Sciences Division
Oak Ridge National Laboratory
Oak Ridge, TN 37831
Task Order No. 1-103

Primary Reviewer:
Eric B. Lewis, M.S.

Signature:
Date:

Eric B. Lewis
FEB 08 2011

Secondary Reviewers:
Sylvia Milanez, Ph.D., D.A.B.T.

Signature:
Date:

Sylvia Milanez
FEB 08 2011

Cheryl B. Bast, Ph.D., D.A.B.T., Group Leader

Signature:
Date:

Cheryl B. Bast
FEB 08 2011

Quality Assurance:
Kimberly G. Slusher, M.S.

Signature:
Date:

Kimberly G. Slusher
FEB 08 2011

Disclaimer

This review may have been altered subsequent to the contractor's signatures above.

Oak Ridge National Laboratory managed and operated by UT-Battelle, LLC., for the U.S. Department of Energy under Contract No. DE-AC05-00OR22725.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Office of Chemical Safety and Pollution
Prevention

March 21, 2011

MEMORANDUM

Subject: Name of Pesticide Product: GF-2654
EPA File Symbol: 62719-AGU
DP Barcode: D383749
Decision Number: 440743
Action Code: R310
PC Code: 051505 2,4-Dichlorophenoxyacetic Acid, choline salt

From: Breann Hanson, Biologist *B. Hanson*
Technical Review Branch (TRB)
Registration Division (RD; 7505P) *T.L. Toxicology*

To: Michael Walsh, RM Team 23
Herbicide Branch
Registration Division (7505P)

Applicant: Dow AgroSciences, LLC
9330 Zionsville Rd.
Indianapolis, IN 46268

FORMULATION FROM LABEL:

Active Ingredients:	% by wt
051505 2,4-Dichlorophenoxyacetic Acid, choline salt	56.3
CAS No. 1048373-72-3	

Other Ingredients:	43.7
Total:	100.0%

2,4-Dichlorophenoxyacetic Acid - 38.4% - 3.8 lb/gal

ACTION REQUESTED: The Risk Manager requests: "TRB Acute Toxicity Reviewers: Please review the attached information for new product registration 62719-AGU. Please determine suitability for registration. Please provide appropriate Precautionary Statements. Please note this is an e-submission and the MRIDs can be located in DOCUMENTUM. ..."

BACKGROUND: Dow AgroSciences, LLC (herein the "registrant") has submitted acute oral, acute dermal, acute inhalation, primary eye irritation, primary skin irritation and dermal sensitization studies (MRIDs 482346-03 through -08) in support of their registration for GF-2654, EPA File Symbol: 62719-AGU. The acute oral, dermal, inhalation, and primary eye and dermal irritation studies were performed at Eurofins|Product Safety Laboratories and the dermal sensitization study was performed at Toxicology & Environmental Research and Consulting. Included in the data package was the proposed label, basic and alternate CSFs (dated 19/AUG/2010), application, data matrix and letter from the registrant.

COMMENTS AND RECOMMENDATIONS:

1. The six studies have been reviewed and the acute dermal, acute inhalation, primary eye irritation, primary dermal irritation and dermal sensitization studies are classified as Acceptable. The acute oral toxicity study is classified as Supplemental. As an LD₅₀ could be calculated by EPA, another oral toxicity study does not have to be submitted to the Agency. Please see the deficiencies, noted below.

2. The acute toxicity profile for GF-2654, EPA File Symbol: 62719-AGU, is as follows:

Acute oral toxicity	III	Supplemental	MRID 48234603*
Acute dermal toxicity	IV	Acceptable	MRID 48234604
Acute inhalation toxicity	IV	Acceptable	MRID 48234605
Primary eye irritation	I	Acceptable	MRID 48234606
Primary skin irritation	IV	Acceptable	MRID 48234607
Dermal sensitization	Negative	Acceptable	MRID 48234608

*According to the Acute Oral Toxicity (AOT) (Guideline 425) Statistical Program, the performing laboratory did not conduct the study properly. As noted in the PSI-Generated AOT 425 program, stopping criteria were not met and the laboratory should have continued dosing animals according to AOT 425 Guidelines. In lieu of conducting another oral toxicity study in order to save animals, this reviewer input additional animal data into an EPA-generated AOT 425 program. As the original study should have been continued by dosing another animal at 1200 mg/kg bw, and as animals in the original study had a mortality rate of 50% at 1200 mg/kg bw (1/2 animals died), this reviewer input a conservative estimate of the next animal that should have been dosed as also not surviving the study period (i.e. animal 1 (EPA-generated) did not survive (short-term outcome = X) at the next theoretical dose of 1200 mg/kg bw). Since 425 Guidelines were met by this theoretical dosing sequence, the study could be considered complete and an LD₅₀ calculated. As the EPA-generated LD₅₀ and the PSI-generated LD₅₀ values are the same, the only difference being in the range of the confidence intervals, the registrant should have no qualms with this decision by the EPA. A new oral toxicity study does not have to be submitted.

3. **LABELING:** Based on the toxicity profile above, the following are the precautionary and first aid statements for this product as obtained from the Label Review System:

PRODUCT ID #: 062719-00634
PRODUCT NAME: GF-2654

PRECAUTIONARY STATEMENTS

SIGNAL WORD: DANGER

SPANISH SIGNAL WORD: PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

Restricted Use Pesticide due to toxicity categories. For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification. Child Resistant Packaging may be required by the Agency.

Hazards to Humans and Domestic Animals: Corrosive. Causes irreversible eye damage. Harmful if swallowed. Do not get in eyes or on clothing. Wear: Long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves (such as Natural Rubber, Selection Category A). Wear protective eyewear (goggles, face shield).

USER SAFETY RECOMMENDATIONS: Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

First Aid:

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

If swallowed:

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything to an unconscious person.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

4. Please note that the product is considered a Restricted Use Pesticide due to toxicity categories. Child Resistant Packaging may be required by the Agency. No precautionary, first aid or PPE label language changes are required.

5. The basic and alternate CSFs for the product should be approved by the TRB Product Chemistry Team.

Reviewer: Breann Hanson
Risk Manager (EPA): Michael Walsh, RM Team 23

Date: March 21, 2011

STUDY TYPE: Acute Oral Toxicity - Rat; OPPTS 870.1100; OECD 425

TEST MATERIAL: GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5)

CITATION: Durando, J. (2010) Acute Oral Toxicity Up and Down Procedure in Rats. Laboratory Study Number: 29514. Dow Study Number: 101066. Unpublished study prepared by Eurofins|Product Safety Laboratories. June 30, 2010. MRID 48234603.

SPONSOR: Dow AgroSciences, LLC

EXECUTIVE SUMMARY: In an acute oral toxicity study (MRID 48234603), a total of five young adult female rats (age: 9-11 weeks; weight: 122-150 g; source: Harlan, Indianapolis, IN and Charles River Laboratories, Stoneridge, NY; strain: Fischer 344) were given a single oral dose of GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5) by gavage at a dose of either 600, 1200 or 2390 mg/kg bw. Based on an estimated LD₅₀ of 1200 mg/kg bw, a Main Test was conducted using a default starting dose of 600 mg/kg bw. The test substance was administered in sequence; the decision to proceed with the next animal was based on the survival of the previous animal post-dosing. Individual body weights were recorded prior to dosing (study day 0) and again on study days 7 and 14 or after death. The animals were observed for mortality, clinical signs of toxicity and behavioural changes during the first several hours post-dosing and at least once daily thereafter for the remainder of the 14-day study period. Four of the five animals were necropsied. A gross necropsy was inadvertently not performed for Animal No. 3105.

All 2/2 animals dosed at 600 mg/kg bw survived, gained body weight and appeared active and healthy throughout the study period. There were no clinical signs of toxicity observed. No gross internal findings were observed at necropsy.

One of two animals dosed at 1200 mg/kg bw died within 1 day post-dosing. Prior to death, this animal exhibited hypoactivity. Post-dosing, the surviving animal exhibited piloerection; the animal was asymptomatic by study day 1 and gained body weight and appeared active and healthy for the remainder of the study period. At necropsy, the decedent had red intestines. No gross internal findings were observed at necropsy for the lone surviving animal.

The single animal dosed at 2390 mg/kg bw died within 21-minutes post-dosing. Prior to death, the animal exhibited prone posture and red ocular discharge. A gross necropsy was inadvertently not performed.

Oral LD₅₀ Females = 1200 mg/kg bw (95% C.I. = 408.8 - 2790 mg/kg bw)

Based on the EPA-calculated LD₅₀ in females, GF-2654 is classified as EPA Toxicity Category III.

This acute oral study is classified as Supplemental. It does not satisfy the guideline requirement for an acute oral study (OPPTS 870.1100; OECD 425) in the rat. A gross necropsy was inadvertently not performed for Animal No. 3105. As this deviation does not impact the calculation of the estimated LD₅₀, it had no significant impact on the outcome of this study. In addition, according to the Acute Oral Toxicity (AOT) (Guideline 425) Statistical Program, the performing laboratory did not conduct the study properly. As noted in the PSL-Generated AOT 425 program, noted below under "Statistics", stopping criteria were not met and the laboratory should have continued dosing animals according to AOT 425 Guidelines. In lieu of conducting another oral toxicity study in order to save animals, this reviewer input additional animal data into an EPA-generated AOT 425 program, noted below under "Statistics". As the

original study should have been continued by dosing another animal at 1200 mg/kg bw, and as animals in the original study had a mortality rate of 50% at 1200 mg/kg bw (1/2 animals died), this reviewer input a conservative estimate of the next animal that should have been dosed as also not surviving the study period (i.e. animal 1 (EPA-generated) did not survive (short-term outcome = X) at the next theoretical dose of 1200 mg/kg bw). Since 425 Guidelines were met by this theoretical dosing sequence, the study could be considered complete and an LD₅₀ calculated. As the EPA-generated LD₅₀ and the PSL-generated LD₅₀ values are the same, the only difference being in the range of the confidence intervals, the registrant should have no qualms with this decision by the EPA. A new oral toxicity study does not have to be submitted.

COMPLIANCE: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

RESULTS and DISCUSSION: Individual animals were dosed as follows:

Limit Test			
Animal No.	Dose level (mg/kg)	Short-Term Outcome	Long-Term Outcome
3101	600	S	S
3102	1200	D	D
3103	600	S	S
3104	1200	S	S
3105	2390	D	D

S = survival D = death

Based on an estimated LD₅₀ of 1200 mg/kg bw, a Main Test was conducted using a default starting dose of 600 mg/kg bw. The test substance was administered in sequence; the decision to proceed with the next animal was based on the survival of the previous animal post-dosing.

Statistics: Acute Oral Toxicity (Guideline 425) Statistical Program (Westat, version 1.0, May 2001) was used for all data analyses including: dose progression selections, stopping criteria determinations and/or LD₅₀ and confidence limit calculations.

PSL-Generated AOT 425:

AOT425statpgm (Version: 1.0) Test Results and Recommendations
 Acute Oral Toxicity (OECD Test Guideline 425) Statistical Program
 Date/Time: Monday, March 21, 2011, 11:54:19 AM
 Data file name: work.dat
 Last modified: 3/21/2011 11:54:19 AM
 Test/Substance: GF-2654
 Test type: Main Test
 Limit dose (mg/kg): 2000
 Assumed LD₅₀ (mg/kg): Default
 Assumed sigma (mg/kg): 0.5
 Recommended dose progression: 2000, 550, 175, 55, 17.5, 5.5, 1.75

DATA:

Test Animal Seq.	Dose ID (mg/kg)	Short-term Result	Long-term Result
------------------	-----------------	-------------------	------------------

1	3101	600	O	O
2	3102	1200	X	X
3	3103	600	O	O
4	3104	1200	O	O
5	3105	2390	X	X

(X = Died, O = Survived)

Dose Recommendation: Dose the next animal at 550 mg/kg.

WARNING: Please review the data for accuracy. Starting the Main Test above the likely LD50 will induce bias toward the starting dose. See OECD Guideline 425.

SUMMARY OF LONG-TERM RESULTS:

Dose	O	X	Total
600	2	0	2
1200	1	1	2
2390	0	1	1

All Doses 3 2 5

Statistical Estimate based on long term outcomes: **The estimated LD50 and confidence interval(s) are preliminary because no stopping criteria were met.**

Estimated LD50 = 1200 (The one dose with partial response).

95% PL Confidence interval is 478.2 to Greater than 20,000.

EPA-Generated AOT 425:

AOT425statpgm (Version: 1.0) Test Results and Recommendations

Acute Oral Toxicity (OECD Test Guideline 425) Statistical Program

Date/Time: Thursday, March 17, 2011, 3:04:08 PM

Data file name: work.dat

Last modified: 3/17/2011 3:04:08 PM

Test/Substance: GF-2654

Test type: Main Test

Limit dose (mg/kg): 5000

Assumed LD50 (mg/kg): Default

Assumed sigma (mg/kg): 0.5

Recommended dose progression: 5000, 1750, 550, 175, 55, 17.5, 5.5, 1.75

DATA:

Test Seq.	Animal ID	Dose (mg/kg)	Short-term Result	Long-term Result
1	3101	600	O	O
2	3102	1200	X	X
3	3103	600	O	O
4	3104	1200	O	O
5	3105	2390	X	X
6	1	1200	X	X

(X = Died, O = Survived)

Dose Recommendation: The main test is complete.

WARNING: Please review the data for accuracy. Starting the Main Test above the likely LD₅₀ will induce bias toward the starting dose. See OECD Guideline 425. The doses are not completely consistent with the recommended doses.

Stopping criteria met: LR criterion.

SUMMARY OF LONG-TERM RESULTS:

Dose	O	X	Total
600	2	0	2
1200	1	2	3
2390	0	1	1
All Doses	3	3	6

Statistical Estimate based on long term outcomes: Estimated LD₅₀ = 1200 (The one dose with partial response). 95% PL Confidence interval is 408.8 to 2790.

A. Mortality: All 2/2 animals dosed at 600 mg/kg bw survived. One of two animals dosed at 1200 mg/kg bw died within 1 day post-dosing. The single animal dosed at 2390 mg/kg bw died within 21-minutes post-dosing.

B. Clinical observations: All 2/2 animals dosed at 600 mg/kg bw gained body weight and appeared active and healthy throughout the study period. There were no clinical signs of toxicity observed.

Prior to death, the animal dosed at 1200 mg/kg bw animal exhibited hypoactivity. Post-dosing, the surviving animal dosed at 1200 mg/kg bw exhibited piloerection; the animal was asymptomatic by study day 1 and gained body weight and appeared activity and healthy for the remainder of the study period.

The single animal dosed at 2390 mg/kg bw died within 21-minutes post-dosing. Prior to death, the animal dosed at 2390 mg/kg bw exhibited prone posture and red ocular discharge.

C. Gross Necropsy: All 2/2 animals dosed at 600 mg/kg bw survived, gained body weight and appeared active and healthy throughout the study period. There were no clinical signs of toxicity observed. No gross internal findings were observed at necropsy.

One of two animals dosed at 1200 mg/kg bw died within 1 day post-dosing. Prior to death, this animal exhibited hypoactivity. Post-dosing, the surviving animal exhibited piloerection; the animal was asymptomatic by study day 1 and gained body weight and appeared activity and healthy for the remainder of the study period. At necropsy, the decedent had red intestines. No gross internal findings were observed at necropsy for the lone surviving animal.

The single animal dosed at 2390 mg/kg bw died within 21-minutes post-dosing. Prior to death, the animal exhibited prone posture and red ocular discharge. A gross necropsy was inadvertently not performed.

D. Reviewer's Conclusions: This reviewer disagrees slightly with the study author's conclusions. Based on the EPA-generated calculated LD₅₀ in females, GF-2654 is classified as EPA Toxicity Category III.

E. Deficiencies: A gross necropsy was inadvertently not performed for Animal No. 3105. As this deviation does not impact the calculation of the estimated LD₅₀, it had no significant impact on the outcome of this study.

In addition, according to the Acute Oral Toxicity (AOT) (Guideline 425) Statistical Program, the performing laboratory did not conduct the study properly. As noted in the PSL-Generated AOT 425 program, noted above under "Statistics", stopping criteria were not met and the laboratory should have continued dosing animals according to AOT 425 Guidelines. In lieu of conducting another oral toxicity study in order to save animals, this reviewer input additional animal data into an EPA-generated AOT 425 program, noted above under "Statistics". As the original study should have been continued by dosing another animal at 1200 mg/kg bw, and as animals in the original study had a mortality rate of 50% at 1200 mg/kg bw (1/2 animals died), this reviewer input a conservative estimate of the next animal that should have been dosed as also not surviving the study period (i.e. animal 1 (EPA-generated) did not survive (short-term outcome = X) at the next theoretical dose of 1200 mg/kg bw). Since 425 Guidelines were met by this theoretical dosing sequence, the study could be considered complete and an LD₅₀ calculated. As the EPA-generated LD50 and the PSL-generated LD50 values are the same, the only difference being in the range of the confidence intervals, the registrant should have no qualms with this decision by the EPA. A new oral toxicity study does not have to be submitted.

Reviewer: Breann Hanson
Risk Manager (EPA): Michael Walsh, RM Team 23

Date: March 17, 2011

STUDY TYPE: Acute Dermal Toxicity - Rat; OPPTS 870.1200; OECD 402

TEST MATERIAL: GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5)

CITATION: Durando, J. (2010) Acute Dermal Toxicity Study in Rats. Laboratory Study Number: 29515. Dow Study Number: 101067. Unpublished study prepared by Eurofins Product Safety Laboratories. June 30, 2010. MRID 48234604.

SPONSOR: Dow AgroSciences, LLC

EXECUTIVE SUMMARY: In an acute dermal toxicity study (MRID 48234604), 5/sex rats (age: 11-12 weeks; weight: 257-277 g males, 150-166 g females; source: Harlan, Indianapolis, IN; strain: Fischer 344) were dermally exposed to GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5) at a limit dose of 5000 mg/kg bw. At the request of the Sponsor, female animals were tested first; as no female animals died, the study proceeded with the male animals. The test substance was applied evenly over a dose area, covering approximately 10% of the body surface, covered with a gauze pad and then wrapped with tape and left in place for 24 hours. Post-exposure, the dose areas were gently cleansed with a 3% soap solution. Individual body weights were recorded prior to application (study day 0) and again on study days 7 and 14. The animals were observed for mortality, clinical signs of toxicity and behavioural changes during the first several hours post-application and at least once daily thereafter for the remainder of the 14 day study period. All animals were necropsied.

All 10/10 animals survived the study period. Post-exposure, 2/5 female and 1/5 male rats exhibited irregular respiration; animals were asymptomatic by study day 2. In addition, dermal irritation (erythema and edema) were observed at the dose site of 3/5 female and all 5/5 male animals between study days 1 and 2. One female and 3/5 male animals lost a minimal amount of body weight (1-3 grams) the first week of the study period; all animals exceeded their initial body weights at study termination. No gross internal findings were observed at necropsy.

Dermal LD₅₀ Males > 5000 mg/kg bw
Dermal LD₅₀ Females > 5000 mg/kg bw
Dermal LD₅₀ Combined > 5000 mg/kg bw

Based on the observed LD₅₀, GF-2654 is classified as EPA Toxicity Category IV.

This acute dermal study is classified Acceptable. It does satisfy the guideline requirement for an acute dermal study (OPPTS 870.1200; OECD 402) in the rat.

COMPLIANCE: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

Dose (mg/kg bw)	Mortality/Number Tested		
	Males	Females	Combined
5000	0/5	0/5	0/10

Statistics: No statistical analysis was required since all animals survived at the limit dose. The dermal LD₅₀ was observed as being > 5000 mg/kg.

A. Mortality: None; all animals survived.

B. Clinical observations: Post-exposure, 2/5 female and 1/5 male rats exhibited irregular respiration; animals were asymptomatic by study day 2. In addition, dermal irritation (erythema and edema) were observed at the dose site of 3/5 female and all 5/5 male animals between study days 1 and 2. One female and 3/5 male animals lost a minimal amount of body weight (1-3 grams) the first week of the study period; all animals exceeded their initial body weights at study termination.

C. Gross Necropsy: No gross internal findings were observed at necropsy.

D. Reviewer's Conclusions: This reviewer agrees with the study author's conclusions. Based on the LD₅₀, GF-2654 is classified as EPA Toxicity Category IV.

E. Deficiencies: None.

Reviewer: Breann Hanson
Risk Manager (EPA): Michael Walsh, RM Team 23

Date: March 17, 2011

STUDY TYPE: Acute Inhalation Toxicity - Rat; OPPTS 870.1300; OECD 403

TEST MATERIAL: GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1;; clear amber liquid)

CITATION: Kriefer, S.M., Garlinghouse, C.R. (2010) GF-2654: Acute Liquid Aerosol Inhalation Toxicity Study in F344/DuCrI Rats. Laboratory Project Study ID: 101045. Unpublished study prepared by Toxicology & Environmental Research and Consulting. June 17, 2010. MRID 48234605.

SPONSOR: Dow AgroSciences, LLC

EXECUTIVE SUMMARY: In an acute inhalation toxicity study (MRID 48234605), 5/sex young adult rats (age: 8 weeks; weight: 165.0-183.0 g males; 119.7-123.8 g females; source: Charles River Laboratories, Inc., Kingston, NY; strain: F344/DuCrI) were exposed nose-only via the inhalation route to GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1;; clear amber liquid) for 4 hours at a gravimetrically determined concentration of 5.21 mg/L. Individual animal body weights were recorded prior to exposure (study day 1) and again on study days 2, 4, 8, 11 and 15. Clinical observations were conducted pre-exposure, during exposure, twice following exposure on study day 1 and daily thereafter for the remainder of the 14 day study period. All animals were necropsied at the end of the study.

All animals survived and exhibited no clinical signs of toxicity either during exposure or post-exposure. Mean body weight losses were noted for male and female animals on study day 2; animals exceeded their initial body weights by study termination. At necropsy, one female animal had an ovarian cyst that was determined to be unrelated to treatment. No treatment-related gross internal findings were observed at necropsy. The MMAD was 1.98 μ m and the GSD 2.40.

LC₅₀ Combined > 5.21 mg/L.

LC₅₀ Males > 5.21 mg/L.

LC₅₀ Females > 5.21 mg/L

Based on the observed LC₅₀ being greater than 5.21 mg/L, GF-2654 is classified as EPA Toxicity Category IV for acute inhalation toxicity.

This acute inhalation study is classified as acceptable. It does satisfy the guideline requirement for an acute inhalation study (OPPTS 870.1300; OECD 403) in the rat. A copy of the original certificate analysis was not provided in the study report. This deficiency had no effect on the overall acceptability of this study.

COMPLIANCE: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

Nominal Conc. (mg/L)	Gravimetric Conc. (mg/L)	MMAD μm	GSD	Mortality/Number Tested		
				Males	Females	Combined
10.8	5.21	1.98	2.40	0/5	0/5	0/10

Test Atmosphere / Chamber Description:

Gravimetric Conc. (mg/L):	5.21
Chamber Volume:	42 L
Total Airflow (mean):	30 LPM
Temperature (mean):	21.0 °C
Relative Humidity (mean):	41%
Time to equilibrium:	6.4 min

Test atmosphere concentration: The mass concentration of aerosol was determined gravimetrically 4 times during the exposure period. Samples were taken by drawing air, at 1 LPM, through a sampling probe located in the breathing zone of the animals. Aerosol particles were collected on pre-weighed glass fiber filters and through charcoal sorbent tubes. After sampling, the filter and tubes were reweighed. The time-weighted average exposure concentration was calculated from the gravimetric measurements. The nominal concentration was calculated based on the amount of test material fed into the generation system divided by the total chamber airflow during exposure.

Particle size determination: Particle size was determined twice during exposure using a multi-stage mercur-style cascade impactor. Samples were withdrawn from the breathing zone of the test animals onto filter papers which were weighed before and after sampling to determine the mass collected.

A. Mortality: None; all animals survived.

B. Clinical observations: All animals exhibited no clinical signs of toxicity either during exposure or post-exposure. Mean body weight losses were noted for male and female animals on study day 2; animals exceeded their initial body weights by study termination. The MMAD was 1.98 μm and the GSD 2.40.

C. Gross Necropsy: At necropsy, one female animal had an ovarian cyst that was determined to be unrelated to treatment. No treatment-related gross internal findings were observed at necropsy.

D. Reviewer's Conclusions: This reviewer agrees with the study author's conclusion. Based on the LC₅₀, GF-2654 is classified as EPA Toxicity Category IV.

E. Deficiencies: A copy of the original certificate analysis was not provided in the study report. This deficiency had no effect on the overall acceptability of this study.

Reviewer: Breann Hanson
Risk Manager (EPA): Michael Walsh, RM Team 23

Date: March 17, 2011

STUDY TYPE: Primary Eye Irritation - Rabbit; OPPTS 870.2400; OECD 405

TEST MATERIAL: GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5)

CITATION: Durando, J. (2010) Primary Eye Irritation Study in Rabbits. Laboratory Study Number: 29516. Dow Study Number: 101069. Unpublished study prepared by Eurofins|Product Safety Laboratories. June 30, 2010. MRID 48234606.

SPONSOR: Dow AgroSciences, LLC

EXECUTIVE SUMMARY: In a primary eye irritation study (MRID 48234606), 0.1 mL of GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5) was instilled into the conjunctival sac of the right eye in three male young adult rabbits (source: Robinson Services, Inc., Clemmons, NC; strain: New Zealand albino). The untreated left eye served as a control. At the request of the Sponsor, initially only a single animal was treated; since irritation cleared by study day 17 and no significant irritation was observed, the test was completed with an additional 2 animals. Test animals were scored for irritation at approximately 1, 24, 48, and 72 hours post-instillation and again on study days 4, 7, 10, 14, 17 and/or 21. Fluorescein dye was used at the 24-hour and at subsequent observations, if needed, to verify the absence of corneal damage. Test animals were observed for clinical signs of toxicity and behavioural changes at least once daily throughout the study period. Irritation was scored based on Draize.

Apart from the eye irritation noted, animals appeared active and healthy throughout the study period. One-hour post-instillation, all 3/3 treated eyes exhibited corneal opacity (score 1), iritis (score 1) and conjunctival redness (score 2), chemosis (score 1-2) as well as discharge (score 2). The overall incidence and severity of irritation decreased gradually with time. A white discharge and/or pannus were evident for one treated eye, between study days 10 and 21. Although two animals were free from ocular irritation by study day 17 or 21, one treated eye exhibited corneal opacity, iritis and minimal conjunctivitis and pannus through study day 21 (study termination). The maximum mean total score was 35.3 noted at 21, 48 and 72 hours.

Based on irritation persisting in one treated eye through study day 21, GF-2654 is classified as EPA Toxicity Category I for primary eye irritation.

This study is classified as Acceptable. It does satisfy the guideline requirement for a primary eye irritation study (OPPTS 870.2400; OECD 405) in the rabbit.

COMPLIANCE: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

Observations	Number "positive"/number tested									
	Hours				Days					
	1	24	48	72	4	7	10	14	17	21***
Corneal Opacity	3/3	3/3	3/3	3/3	3/3	3/3	3/3	1/3	1/3	1/2
Iritis	3/3	3/3	3/3	3/3	3/3	3/3	3/3	2/3	2/3	1/2
Redness *	3/3	3/3	3/3	3/3	3/3	3/3	3/3	1/3	1/3	0/2
Chemosis *	2/3	3/3	3/3	3/3	2/3	1/3	1/3	1/3	1/3	0/2
Discharge**	3/3	3/3	3/3	3/3	3/3	3/3	1/3	1/3	1/3	0/2
Severity of Irritation – Mean Score	33	35.3	35.3	35.3	31.3	27.3	21	12.7	9.7	8

*Score of 2 or more required to be considered "positive."

** Not considered a positive irritation effect.

*** Only 2 animals were observed on study day 21.

A. Observations: One-hour post-instillation, all 3/3 treated eyes exhibited corneal opacity (score 1), iritis (score 1) and conjunctival redness (score 2), chemosis (score 1-2) as well as discharge (score 2). The overall incidence and severity of irritation decreased gradually with time. A white discharge and/or pannus were evident for one treated eye, between study days 10 and 21. Although two animals were free from ocular irritation by study day 17 or 21, one treated eye exhibited corneal opacity, iritis and minimal conjunctivitis and pannus through study day 21 (study termination). The maximum mean total score was 35.3 noted at 21, 48 and 72 hours.

B. Results: GF-2654 caused irritation through study day 221 in one treated eye. The maximum mean total score was 35.3 noted at 21, 48 and 72 hours.

C. Reviewer's Conclusions: This reviewer agrees with the study author's conclusions. GF-2654 is classified as EPA Toxicity Category I.

D. Deficiencies: None.

Reviewer: Breann Hanson
Risk Manager (EPA): Michael Walsh, RM Team 23

Date: March 17, 2011

STUDY TYPE: Primary Dermal Irritation - Rabbit; OPPTS 870.2500; OECD 404.

TEST MATERIAL: GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5)

CITATION: Durando, J. (2010) Primary Skin Irritation Study in Rabbits. Laboratory Study Number: 29517. Dow Study Number: 101068. Unpublished study prepared by Eurofins/Product Safety Laboratories. June 30, 2010. MRID 48234607.

SPONSOR: Dow AgroSciences, LLC

EXECUTIVE SUMMARY: In a primary skin irritation study (MRID 48234607), 3 female young adult rabbits (source: Robinson Services, Inc., Clemmons, NC; strain: New Zealand albino) were dermally exposed to 0.5 mL of GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5). The test substance was applied to an intact dose site on each animal and covered with a gauze pad, wrapped with semi-occlusive tape and held in place for 4 hours. The sites were then gently cleansed with a 3% soap solution then tap water. Dermal irritation was scored based on the Draize system within 30-60 minutes post-pad removal and again at approximately 24, 48 and 72 hours. Animals were observed for clinical signs of toxicity and behavioural changes at least once daily throughout the study period.

Apart from the dermal irritation noted, all animals appeared active and healthy throughout the study period. Within 1-hour post-gauze removal, all 3/3 treated sites exhibited well-defined erythema (score 2) and very slight edema (score 1). The overall incidence and severity of irritation decreased with time. All animals were free of irritation within 72-hours. The primary dermal irritation index (PDII) score at 72 hours was 0.0.

Based on the lack of skin irritation at 72-hours, GF-2654 is classified as EPA Toxicity Category IV for primary skin irritation.

This study is classified as Acceptable. It does satisfy the guideline requirement for a primary skin irritation study (OPPTS 870.2500; OECD 404) in the rabbit.

COMPLIANCE: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

**INDIVIDUAL SKIN IRRITATION SCORES
ERYTHEMA/EDEMA**

Animal No.	Sex	Hours			
		0.5 - 1	24	48	72
3501	F	2/1	1/1	1/0	0/0
3502	F	2/1	1/0	0/0	0/0
3503	F	2/1	1/1	1/0	0/0
Severity of Irritation - Mean Score		2/1	1/0.7	0.7/0	0/0

A. Observations: Within 1-hour post-gauze removal, all 3/3 treated sites exhibited well-defined erythema (score 2) and very slight edema (score 1). The overall incidence and severity of irritation decreased with time. All animals were free of irritation within 72-hours. The primary dermal irritation index (PDII) score at 72 hours was 0.0.

B. Results: The PDII score at 72 hours was 0.0.

C. Reviewer's Conclusions: This reviewer agrees with the study author's conclusions. GF-2654 is classified as EPA Toxicity Category IV.

D. Deficiencies: None.

Reviewer: Breann Hanson
Risk Manager (EPA): Michael Walsh, RM Team 23

Date: March 21, 2011

STUDY TYPE: Dermal Sensitization - Mouse; OPPTS 870.2600; OECD 429

TEST MATERIAL: GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; clear amber liquid)

CITATION: Boverhof, D. R., Sosinski, L. K. (2010) GF-2654: Local Lymph Node Assay in CBA/J Mice. Laboratory Project Study ID: 101042. Unpublished study prepared by Toxicology & Environmental Research and Consulting. June 28, 2010. MRID 48234608.

SPONSOR: Dow AgroSciences, LLC

EXECUTIVE SUMMARY: In a dermal sensitization study (MRID 48234608) with GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; clear amber liquid), a total of 30 female mice (age: 9-12 weeks; weight: 21.4-25.4 g; source: Harlan, Indianapolis, IN; strain: CBA/J) were tested according to the Local Lymph Node Assay (LLNA).

In a range finding study, the test substance was tested at concentrations of 35% and 50% in vehicle. No erythema was present and all animals gained body weight; therefore the highest dose to be evaluated is 50%. The vehicle used throughout the study was Pluronic L92 surfactant (1% w/v) in water.

Four groups of 6 test animals were dosed with either vehicle only (0% test substance) or with the test substance at concentrations of 5%, 25% or 50% in vehicle. Alpha-Hexylcinnamaldehyde (HCA) at a concentration of 30% in vehicle was run concurrently with another group of 6 test animals as the positive control substance.

For 3 consecutive days (study days 1-3), the test animals in each group were treated with 25 µL of their respective solutions on the dorsal surface of each ear. On study day 6 all animals were injected into the tail vein with 250 µL of sterile phosphate buffered saline (PBS) containing 20 µCi of ³H-methyl thymidine (³HTdR) and sacrificed 5 hours later. The auricular lymph nodes of each ear were removed and prepared in a single cell suspension and incubated for approximately 18-70 hours. ³HTdR incorporation was then measured by β-scintillation counting. The counts per minute were converted into disintegrations per minute (dpm). Initial and terminal body weights were recorded. Animals were observed for dermal irritation on study days 1-3 according to the Draize scoring system. Cage-side examinations, as well as checks for morbidity, mortality were made twice daily.

All test animals survived the study period. Body weight losses were observed for 8 test or positive control animals. No dermal irritation was observed on any ear treated with the vehicle alone or with the test substance. Slight to well-defined erythema was observed at ears treated with 30% HCA. Stimulation indices (SIs) of less than 3 were observed at all tested concentrations. The SI for HCA was 4.3.

In this study, **GF-2654 is not a dermal sensitizer** (SIs <3 at all test concentrations).

This study is classified as Acceptable. It does satisfy the guideline requirement for a dermal sensitization study (OPPTS 870.2600; OECD 429) in the mouse. A copy of the original certificate analysis was not provided in the study report. This deficiency had no effect on the overall acceptability of this study.

COMPLIANCE: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

I. MATERIALS and METHODS

1. Vehicle and positive control: The vehicle used throughout the study was Pluronic L92 surfactant (1% w/v) in water. 30% HCA in vehicle was run concurrently as the positive control.

2. Animal assignment and treatment: Four groups of 6 test animals were dosed with either vehicle only (0% test substance) or with the test substance at concentrations of 5%, 25% or 50% in vehicle.

3. Dose selection rationale: In a range finding study, the test substance was tested at concentrations of 35% and 50% in vehicle. No erythema was present and all animals gained body weight; therefore the highest dose to be evaluated is 50%.

4. Treatment preparation and administration: For 3 consecutive days (study days 1-3), the test animals in each group were treated with 25 μ L of their respective solutions on the dorsal surface of each ear. On study day 6 all animals were injected into the tail vein with 250 μ L of sterile phosphate buffered saline (PBS) containing 20 μ Ci of 3 H-methyl thymidine (3 HTdR) and sacrificed 5 hours later. The auricular lymph nodes of each ear were removed and prepared in a single cell suspension and incubated for approximately 18-70 hours.

5. Statistics: Means and standard deviation (SD) were generated for body weight data and the LLNA response. Statistical outliers were identified by a sequential test. Body weight and DPM data were analyzed by a one-way analysis of variance (ANOVA). When differences were indicated by the ANOVA, a comparison of treated vs. control groups was done using a Dunnett's t-test. The alpha level at which all tests were conducted was 0.05. The final interpretation of the biological significance of the responses was based on both statistical outcome and scientific judgment.

6. Range finding study: In a range finding study, the test substance was tested at concentrations of 35% and 50% in vehicle.

II. RESULTS and DISCUSSION:

A. Disintegrations per Minute/Mouse (group means):

Test Substance Concentration	Animal #	Individual Animal DPM	Group Mean DPM \pm SD)	Stimulation Index (SI)*
Vehicle (0%)	2851	614.00	580.67 (\pm 254.76)	N/A
	2852	802.00		
	2853	408.00		
	2854	954.00		
	2855	325.00		
	2856	381.00		
5%	2863	710.00	822.83 (\pm 240.30)	1.4
	2864	1153.0		
	2865	464.00		
	2866	725.00		
	2867	945.00		
	2868	940.00		
25%	2869	612.00	790.67 (\pm 262.30)	1.4
	2870	1314.0		
	2871	636.00		
	2872	727.00		
	2873	761.00		
	2874	694.00		
50%	2875	237.00	701.33 (\pm 521.71)	1.2
	2876	494.00		
	2877	851.00		
	2878	1674.0		
	2879	603.00		
	2880	349.00		
Positive control (30% HCA)	2857	1866.0	2487.5 (\pm 1263.6)	4.3
	2858	4975.0		
	2859	2094.0		
	5860	2517.0		
	2861	1987.0		
	2862	1486.0		

* SI = Group mean DPM \div Vehicle control mean DPM

B. Stimulation Index:

Test Substance Concentration/ Control Group	Vehicle (0%)	10%	25%	35%	Positive Control
Stimulation Index (SI)	N/A	1.4	1.4	1.2	4.3

SI = Group Mean DPM \div Vehicle control mean DPM

C. Reviewer's Conclusions: This reviewer agrees with the study author that GF-2654 is not a dermal sensitizer.

D. Deficiencies: A copy of the original certificate analysis was not provided in the study report. This deficiency had no effect on the overall acceptability of this study.

ACUTE TOX ONE-LINERS:

1. DP BARCODE: 383749				
2. PC CODE: 051505				
3. CURRENT DATE: 21MAR/2011				
4. TEST MATERIAL: GF-2654 (2,4-D choline salt: 57.1 wt% (a.i.); Lot #: E3263-33-1; EPSL Reference No.: 100322-3H; clear amber liquid; pH: 7.0-7.5)				
Study/Species/Lab Study # /Date	MRID	Results	Tox. Cat.	Core Grade
Acute oral toxicity / rat Eurofins Product Safety Laboratories 29514 30/JUN /2010	48234603	Oral LD ₅₀ Females = 1200 mg/kg bw (95% C.I. = 408.8 - 2790 mg/kg bw)	III	S
Acute dermal toxicity / rat Eurofins Product Safety Laboratories 29515 6/JUN/2010	48234604	Dermal LD ₅₀ > 5000 mg/kg bw (males and females)	IV	A
Acute inhalation toxicity / rat Toxicology & Environmental Research and Consulting 101045 17/JUN/2010	48234605	Inhalation LC ₅₀ > 5.21 mg/L (males and females)	IV	A
Primary eye irritation / rabbit Eurofins Product Safety Laboratories 29516 30/JUN/2010	48234606	One-hour: 3/3 exhibited corneal opacity (score 1), iritis (score 1) and conjunctival redness (score 2), chemosis (score 1-2) as well as discharge (score 2). Overall incidence and severity of irritation decreased gradually with time. White discharge and/or pannus were evident for one treated eye between study days 10 -21. Two animals were free from ocular irritation by study day 17 or 21, one treated eye exhibited corneal opacity, iritis and minimal conjunctivitis and pannus through study day 21 (study termination). The maximum mean total score was 35.3 noted at 21, 48 and 72 hours.	I	A
Primary dermal irritation /rabbit Eurofins Product Safety Laboratories 29517 30/JUN/2010	48234607	Within 1-hour:3/3 exhibited well- defined erythema (score 2) and very slight edema (score 1). Overall incidence and severity of irritation decreased with time. Animals were free of irritation within 72-hours. The PDII score at 72 hours was 0.0.	IV	A
Dermal sensitization /Mouse Toxicology & Environmental Research Consulting 101042 28/JUN/2010	48234608	Negative.	--	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, W = Waived



United States
Environmental Protection Agency
Washington, DC 20460

☒ Registration
☐ Amendment
☐ Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number Dow AgroSciences/62719-XXX AGU	2. EPA Product Manager Kathryn Montague	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Dow AgroSciences/GF-2654	PM# 23	
5. Name and Address of Applicant (Include ZIP Code) <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input type="checkbox"/> Notification - Explain below.	<input checked="" type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

This action is for a proposed new Section 3 registration for GF-2654, the active ingredient is 2,4-D Choline Salt. This action is an end use product requiring review of data package. Therefore, this action is EPA PRIA No. R310, fee \$4,578.00.

Section - III

1. Material This Product Will Be Packaged in:

Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No * Certification must be submitted	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes" Unit Packaging wgt. No. per container	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes" Package wgt. No. per container	2. Type of Container <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper Other (Specify) _____
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container	4. Size(s) Retail Container 55 gal	5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input checked="" type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled <input type="checkbox"/> Other _____			

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Name Diego Fonseca	Title Regulatory Leader	Telephone No. (Include Area Code) (317)337-4693
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Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received
(Stamped)

2. Signature 	3. Title Regulatory Leader
4. Typed Name Diego Fonseca (dfonseca@dow.com)	5. Date September 29, 2010

308/2E
September 29, 2010



Document Processing Desk (APPL/E-SUB/REGFEE)
Office of Pesticide Programs (7504P)
U. S. Environmental Protection Agency
One Potomac Yard
2777 S. Crystal Drive
Arlington, VA 22202

Attention: Kathryn Montague/PM-23 (7505P)

GF-2654 (AI: 2,4-D)
EPA REGISTRATION NUMBER: 62719-XXX
APPLICATION FOR NEW REGISTRATION - SECTION 3

Dow AgroSciences is respectfully submitting an application for new registration of GF-2654, which is an end-use herbicide product.

We believe this registration action qualifies as a *PRIA action R310, \$4,578.00, New end-use or manufacturing use product; requires review of data package within RD; includes reviews and/or waivers of data for only product chemistry, acute toxicity, public health pest efficacy.* A complimentary copy of the Pay.Gov.Payment Confirmation has been included (Pay.gov Tracking ID: 251HLA7O; Agency Tracking ID: 74140264697)

Dow AgroSciences is submitting this submission electronically (e-PRISM.xml New Section 3 for GF-2654).

Contents of Submission

Volume No.
Volume 1

Administrative Contents

- Transmittal document (this letter)
- Complimentary Copy: Pay Gov Payment Confirmation
- EPA Form 8570-1, Application for Pesticide,
- EPA Form 8570-34, Certification with Respect to Citation of Data
- EPA Form 8570-35, Data Matrix – Agency Copy (4 Pages)
- EPA Form 8570-35, Data Matrix – Public File Copy (4 Pages)
- Basic Confidential Statement of Formula entitled GF-2654 dated August 19, 2010 (1 page)
- Alternate #1 Confidential Statement of Formula entitled GF-2654 date August 19, 2010 (1 page)
- Label entitled 062719-XXXXXX.20100929.GF-2654-XXX 29Sep10d.pdf (4 Pages plus Registration Notes)
- CD containing e-PRISM.xml -- New Section 3

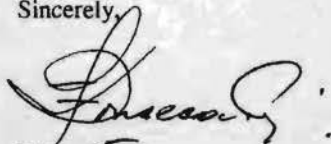
Volume Number	MRID No.	Contents
Volume #2 (830.1550, 830.1600, 830.1620, 830.1670, 830.1750, 830.1800)	48234601 C	Title: Group A-Product Identity and Composition, Description of Materials Used to Produce the Product, Description of Production and Formulation Process, Discussion of Formation of Impurities, Certified Limits, and Enforcement Analytical Method for GF-2654, a herbicide containing 2,4-Dichlorophenoxyacetic Choline Salt Author: Tank, Holger Study ID: NAFST-10-165 Pages: 1-114 Report Date: August 24, 2010 (1 PDF Copy)
Volume #3 (830.6302, 830.6303, 830.6304, 830.6314, 830.6315, 830.6316, 830.7000, 830.7100, 830.7300)	48234602 C	Title: Determination of Color, Odor, Physical State, Oxidizing and Reducing Action, Flashpoint, Explodability, pH, Viscosity, and Density of GF-2654, an End Use Product Containing 2,4-D Choline Salt Author: Frank, Ashleigh Study ID: FAPC-G-10-32 Pages: 1-19 Report Date: July 1, 2010 (1 PDF Copy)
Volume #4 (870.1100)	48234603 T	Title: Acute Oral Toxicity Up And Down Procedure In Rats Author: Durando B.S., Jennifer Study ID: 101066 Pages: 1-32 Report Date: June 30, 2010 (1 PDF Copy)
Volume #5 (870.1200)	48234604 T	Title: Acute Dermal Toxicity Study in Rats Author: Durando B.S., Jennifer Study ID: 101067 Pages: 1-30 Report Date: June 30, 2010 (1 PDF Copy)
Volume #6 (870.1300)	48234605 T	Title: GF-2654: ACUTE LIQUID AEROSOL, INHALATION TOXICITY STUDY IN F344/DuCrI RATS Author: Krieger M.S., S.M.; Garlinghouse B.S., C.R. Study ID: 101045 Pages: 1-71 Report Date: June 17, 2010 (1 PDF Copy)

Page 3

Volume #7 (870.2400)	48234606	Title: Primary Eye Irritation Study in Rabbits Author: Durando B.S., Jennifer Study ID: 101069 Pages: 1-35	Report Date: June 30, 2010 (1 PDF Copy)
Volume #8 (870.2500)	48234607	Title: Primary Skin Irritation Study in Rabbits Author: Durando B.S., Jennifer Study ID: 101068 Pages: 1-31	Report Date: June 30, 2010 (1 PDF Copy)
Volume #9 (870.2600)	48234608	Title: GF-2654: LOCAL LYMPH NODE ASSAY IN CBA/J MICE Author: Boverhof Ph.D., D.R., Sosinski B.S., L. K. Study ID: 101042 Pages: 1-27	Report Date: June 28, 2010 (1 PDF Copy)

If you require additional information, please contact Kerri Hipsky, Registration Assistant for this product, at 317-337-7827; (kahipsky@dow.com) or Cindy Loy, Regulatory Specialist at 317-337-4655 (caloy@dow.com).

Sincerely,



Diego Fonseca
Regulatory Leader - Regulatory Affairs
317-337-4693
317-337-4649 (FAX)
dfonseca@dow.com

Enclosures

DF/kh

308/2E
October 1, 2010



Document Processing Desk (E-SUB)
Office of Pesticide Programs (7504P)
U. S. Environmental Protection Agency
One Potomac Yard
2777 S. Crystal Drive
Arlington, VA 22202

Attention: Geri McCann

GF-2654 (AI: 2,4-D)
EPA REGISTRATION NUMBER: 62719-XXX
REVISED DOCUMENTATION

Dow AgroSciences is submitting a revised CD per a phone conversation request from you on October 1, 2010. I have corrected the XML file per that request.

Dow AgroSciences is submitting this submission electronically (e-PRISM.xml New Section 3 for **GF-2654**).

Contents of Submission

- Transmittal document (this letter)
- CD containing e-PRISM.xml – New Section 3

If you require additional information, please contact me at 317-337-7827; (kahipsky@dow.com).

Sincerely,

A handwritten signature in black ink that reads "Kerri A. Hipsky".

Kerri A. Hipsky
Regulatory Assistant
317-337-7827
317-337-4649 (FAX)
kahipsky@dow.com

Enclosures





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
1200 Pennsylvania Avenue, N.W.
WASHINGTON, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 1.25 hours per response for registration and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, Collection Strategies Division (2822T), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460. Do not send the completed form to this address.

Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number Dow AgroSciences LLC, 9330 Zionsville Road, Indianapolis, IN 46268; 317-337-4693	EPA Registration Number/File Symbol 62719-XXX
Active Ingredient(s) and/or representative test compound(s) GF-2654	Date September 29, 2010
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Terrestrial food crop use	Product Name GF-2654

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

SECTION I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

☒ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

SECTION II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☐ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

SECTION III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

Signature 	Date 09/29/10	Typed or Printed Name and Title Diego Fonseca, Regulatory Leader
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401 M Street, S.W.
WASHINGTON, D.C. 20460

Page 1 of 4

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DATA MATRIX

Date: September 29, 2010		EPA Reg No.: 62719-XXX			
Registrant's Name & Address: Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268		Product: GF-2654			
Ingredient: 2,4-D		Chemical: 030001			
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	
830.1550	Product identity and composition	48234601	62719	OWN	Submitted 09/29/10
830.1600	Description of materials used to produce the product	48234601	62719	OWN	Submitted 09/29/10
830.1620	Description of production process	48234601	62719	OWN	Submitted 09/29/10
830.1670	Discussion of formation impurities	48234601	62719	OWN	Submitted 09/29/10
830.1750	Certified limits	48234601	62719	OWN	Submitted 09/29/10
830.1800	Enforcement analytical method	48234601	62719	OWN	Submitted 09/29/10
830.6302	Color	48234602	62719	OWN	Submitted 09/29/10
830.6303	Physical state	48234602	62719	OWN	Submitted 09/29/10
830.6304	Odor	48234602	62719	OWN	Submitted 09/29/10
830.6314	Oxidation/reduction: chemical incompatibility	48234602	62719	OWN	Submitted 09/29/10
830.6315	Flammability	48234602	62719	OWN	Submitted 09/29/10
830.6316	Explosibility	48234602	62719	OWN	Submitted 09/29/10
830.7000	pH	48234602	62719	OWN	Submitted 09/29/10
830.7100	Viscosity	48234602	62719	OWN	Submitted 09/29/10
830.7300	Density/relative density/bulk density	48234602	62719	OWN	Submitted 09/29/10
870.1100	Acute oral toxicity	48234603	62719	OWN	Submitted 09/29/10
870.1200	Acute dermal toxicity	48234604	62719	OWN	Submitted 09/29/10
870.1300	Acute inhalation toxicity	48234605	62719	OWN	Submitted 09/29/10
870.2400	Acute eye irritation	48234606	62719	OWN	Submitted 09/29/10
870.2500	Acute dermal irritation	48234607	62719	OWN	Submitted 09/29/10
870.2600	Skin sensitization	48234608	62719	OWN	Submitted 09/29/10
Signature:		Name and Title: Diego Fonseca, Global Regulatory Manager Dow AgroSciences LLC		Date: September 29, 2010	



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DATA MATRIX

Date: September 29, 2010		EPA Reg No.: 62719-XXX		
Registrant's Name & Address:	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268	Product:	GF-2654	
Ingredient: 2,4-D	Chemical: 030001			
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status
	2,4-D Technical (62719-24, 62719-25) / Generic			
830.1550	Product Identity and composition	41055801	62719	OWN
830.1550	Product Identity and composition	41055802	62719	OWN
830.1550	Product Identity and composition	41055804	62719	OLD
830.1550	Product Identity and composition	41055805	62719	OLD
830.1600	Description of materials used to produce the product	41055801	62719	OWN
830.1600	Description of materials used to produce the product	41055804	62719	OLD
830.1620	Description of production process	41055801	62719	OWN
830.1650	Description of formulation process	N/A FOR TECH		
830.1670	Description of formation of impurities	41055801	62719	OWN
830.1670	Description of formation of impurities	41973501	62719	OLD
830.1700	Preliminary analysis	41055805	62719	OLD
830.1700	Preliminary analysis	43777502	62719	OWN
830.1750	Certified Limits	41055804	62719	OLD
830.1750	Certified Limits	43777502	62719	OWN
830.1800	Enforcement analytical method	41055802	62719	OWN
830.6302	Color	41055803	62719	OWN
830.6303	Physical state	41055803	62719	OWN
830.6304	Odor	41055803	62719	OWN
830.6313	Stability to sunlight, normal and elevated temperatures, metals, and metal ions	41055803	62719	OWN
830.6314	Oxidizing or reducing action	41973501	62719	OWN
830.6315	Flammability	N/A FOR TECH		
830.6316	Explosibility	41973501	62719	OWN



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DATA MATRIX

Date: September 29, 2010		EPA Reg No.: 62719-XXX		
Registrant's Name & Address:	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268	Product: GF-2654		
Ingredient: 2,4-D	Chemical: 030001			
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status
830.6317	Storage stability of product	WAIVED	62719	OWN
830.6319	Miscibility	N/A FOR TECH		
830.6320	Corrosion characteristics	WAIVED	62719	OWN
830.6321	Dielectric breakdown voltage	N/A FOR TECH		
830.7000	pH of water solutions or suspensions	N/A FOR TECH		
830.7050	UV/Visible absorption	44543504	62719	OWN
830.7100	Viscosity	N/A FOR TECH		
830.7200	Melting point/melting range	41055803	62719	OLD
830.7200	Melting point/melting range	41973501	62719	OWN
830.7220	Boiling point/boiling range	N/A FOR TECH		
830.7300	Density/relative density	41055803	62719	OWN
830.7300	Density/relative density	47290627	62719	OWN
830.7370	Dissociation constant in water	41055803	62719	OWN
830.7550	Partition coefficient (n-octanol/water), shake flask method	41055803	62719	OWN
830.7570	Partition coefficient (n-octanol/water), estimation by liquid chromatography	N/A FOR TECH		
830.7840	Water solubility: column elution method, shake flask method	41055803	62719	OWN
830.7860	Water solubility: generator column method	N/A FOR TECH		
830.7950	Vapor pressure	41055803	62719	OWN
870.1100	Acute oral toxicity	See AcuteTox Profile (Attach 4)	Industry Task Force II on 2,4-D Research Data	OWN
870.1200	Acute dermal toxicity	See AcuteTox Profile (Attach 4)	Industry Task Force II on 2,4-D Research Data	OWN



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DATA MATRIX

Date: September 29, 2010		EPA Reg No.: 62719-XXX		
Registrant's Name & Address:	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268	Product: GF-2654		
Ingredient: 2,4-D		Chemical: 030001		
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status
870.1300	Acute inhalation toxicity	See AcuteTox Profile (Attach 4)	Industry Task Force II on 2,4-D Research Data	OWN
870.2400	Acute eye irritation	See AcuteTox Profile (Attach 4)	Industry Task Force II on 2,4-D Research Data	OWN
870.2500	Acute dermal irritation	See AcuteTox Profile (Attach 4)	Industry Task Force II on 2,4-D Research Data	OWN
870.2600	Skin sensitization	47392101	62719	OWN
CITE-ALL			Industry Task Force II on 2,4-D Research Data	OWN
CITE-ALL			959857	PL
CITE-ALL			Agricultural Re-Entry Task Force	OWN
CITE-ALL			Endangered Species Task Force	OWN
CITE-ALL			Outdoor Residential Exposure Task Force	OWN
CITE-ALL			Spray Drift Task Force	PER

Hipsky, Kerri (KA)

From: Galvin, Cathy (CL)
Sent: Wednesday, September 22, 2010 4:05 PM
To: Hipsky, Kerri (KA)
Subject: FW: Pay.Gov Payment Confirmation

Cathy

-----Original Message-----

From: paygovadmin@mail.doc.twai.gov [mailto:paygovadmin@mail.doc.twai.gov]
Sent: Wednesday, September 22, 2010 4:02 PM
To: Galvin, Cathy (CL)
Subject: Pay.Gov Payment Confirmation

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

Your transaction has been successfully completed.

Transaction Summary

Application Name: PRIA Service Fees
Pay.gov Tracking ID: 251HLA7O
Agency Tracking ID: 74140264697

Account Holder Name: Cathy Galvin
Transaction Type: Sale
Transaction Amount: \$4,578.00
Billing Address: State Regulatory
Billing Address 2: 9330 Zionsville Road
City: Indianapolis
State/Province: IN
Zip/Postal Code: 460521054
Country: USA
Card Type: Visa
Card Number: *****9497
Transaction Date: Sep 22, 2010 4:02:04 PM

Decision Number:
Registration Number: 62719-XXX
Company Name: Dow AgroSciences LLC
Company Number: 62719
Action Code: R310

E-SUBMISSION

The following were received as part of an e-Submission. The documents are available electronically in OPP's Document Repository. *Please route to TRB*

- | | | |
|--|---|------------------------------------|
| <input type="checkbox"/> Active Ingredient | <input type="checkbox"/> New registration | <input type="checkbox"/> Amendment |
| <input type="checkbox"/> Section 3 (end use) | <input type="checkbox"/> New registration | <input type="checkbox"/> Amendment |
| <input type="checkbox"/> Tolerance Petition | <input type="checkbox"/> New registration | <input type="checkbox"/> Amendment |
| <input type="checkbox"/> EUP | <input type="checkbox"/> New registration | <input type="checkbox"/> Amendment |

Qty: 1

Company Number:

62719

Receipt Date:

10/4/2010

Admin Number:

62719-AGU

Receipt Number:

883489

Root MRIDs:

482346

Number of Documents:

8

Comments: *E. submission # 1964*

Admin Number:

Receipt Number:

Root MRIDs:

Number of Documents:

Comments:

Admin Number:

Receipt Number:

Root MRIDs:

Number of Documents:

Comments:

Admin Number:

Receipt Number:

Root MRIDs:

Number of Documents:

Comments:

☐ More on reverse (if checked)

Admin Number:

Receipt Number:

Root MRIDs:

Number of Documents:

Comments:

Admin Number:

Receipt Number:

Root MRIDs:

Number of Documents:

Comments:

Admin Number:

Receipt Number:

Root MRIDs:

Number of Documents:

Comments:

Admin Number:

Receipt Number:

Root MRIDs:

Number of Documents:

Comments:



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

October 22, 2010

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD 308/2E
INDIANAPOLIS, IN 46268-1054

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your submittal of 29-SEP-10. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

October 8, 2010

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

OPP Decision Number: D-440743
EPA File Symbol or Registration Number: 62719-AGU
Product Name: GF-2654
EPA Receipt Date: 29-Sep-2010
EPA Company Number: 62719
Company Name: DOW AGROSCIENCES LLC

JOHN R. FITT, JR.
DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD 308/2E
INDIANAPOLIS, IN 46268-1054

SUBJECT: Receipt of Registration Application Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your application and certification of payment. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: R310

NEW PRODUCT;NON-FAST TRACK (INCLUDES REVIEWS OF PRODUCT
CHEMISTRY;ACUTE TOXICITY;PUBLIC HEALTH PEST EFFICACY);

No additional payment is due at this time.

If you have any questions, please contact the Pesticide Registration Service Fee
Ombudsman at (703) 308-9362.

Sincerely,
Front End Processing Staff
Information Technology & Resources Management Division

A handwritten signature in black ink, appearing to read "John Fitt", written over the typed name and title.

Receipt for Section 3

S: 883489

Resubmission: ☐ Yes ☒ No

Regulatory Type: Product Registration - Section 3

Fee For Service: ☒ Yes ☐ No

Application Type: New Registration

Billable: ☒ Yes ☐ No

Company: 62719 DOW AGROSCIENCES LLC

V

Risk Manager: Registration Division, Risk Management Team 23

Product #: 62719-AGU Product Name: GF-2654

Overrides:

Me Too Section3: Me Too Product Name:

Application Date: 29-Sep-2010



OPP Rec'd Date: 29-Sep-2010



Front End Date: 07-Oct-2010



Risk Manager Send Date:



FFS Due Date:

Negotiated Due Date:

OPP Target Date:

Fast Track: ☐

New Ingredient: ☐

Receipt Description:

e-Submission # 1964
Proposed registration of a end use product requiring review of data package

New Ingredient:

Request Date:

New Ingredient:

Received Date:

Form A: ☐ Signature Date:

Form B: ☐ Signature Date:

Data has been modified. Point-Click 'Save' when Finished!

Print Letter

Enter More Information

Tracking

Receipt Content

Study

CSF

View/Edit

Pages 165-71 - *Confidential Statements of Formula may be entitled to confidential treatment*

BASIC CSF
ACCEPTED AT
REGISTRATION

BASIC CSF
ACCEPTED AT
REGISTRATION

Pages 173-75 - *Confidential Statements of Formula may be entitled to confidential treatment*

ALT #1
ACCEPTED AT
REGISTRATION

ALT #1
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REGISTRATION